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ABSTRACT

The task force was charged with defining medical manpower goals and suggesting programs that will assure an adequate supply of competently trained medical manpower distributed in such a way that health care is accessible to all residents of the state. Specific topics addressed in this report are: physician supply and distribution problems; foreign medical graduates (both U.S. citizens and foreign born); medical schools (clinical affiliations, expansion of undergraduate medical education, COTRANS, enrollment, finance, and programs); enrollment projections and potential; physician distribution by recruitment; health manpower legislation; and recommendations. Some statistical data are included. (MSE)

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REPORT OF THE REGENTS TASK FORCE ON MEDICAL SCHOOL ENROLLMENT AND PHYSICIAN MANPOWER

TO THE REGENTS
OF
THE UNIVERSITY
OF THE
STATE OF NEW YORK

1784

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Regents Task Force on Medical School Enrollment and Physician Manpower
Suite 1847 - 99 Washington Ave., Albany, New York 12230 November 1975

REPORT
OF THE
REGENTS TASK FORCE
ON
MEDICAL SCHOOL ENROLLMENT AND PHYSICIAN MANPOWER
TO THE REGENTS
OF
THE UNIVERSITY OF THE STATE OF NEW YORK

Regents Task Force
on
Medical School Enrollment and Physician Manpower
Suite 1847 - 99 Washington Avenue
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November 1975

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We are grateful also to the State University of New York for its generosity in loaning the services of Rima Bostick, our knowledgeable and efficient staff director, and to the Department for her secretary, Isabelle Kennedy; without their assistance this project could not have been completed in twice the time. We are deeply indebted also to Marjorie Mussman and to Douglas Damrosch, M.D., for invaluable editorial assistance.

Our sincere appreciation also goes to all persons in State departments, and in governmental agencies and professional organizations who have shared their data so generously with us, and to those members of the Education Department who assisted in the analyses and tabulations.

Lastly, we wish to thank the Deans of our twelve medical schools for their patience with our needs for information of all kinds, and particularly for their participation, at our request, in a probing and expensive analysis of the costs of educating a future physician.

It is our hope that the information and recommendations

contained herein will ease the financial plight of the medical schools, will enable them to graduate more physicians with training in those fields of medicine most required by the citizens of New York State, and will improve both the quality and the distribution of medical care available in this State.

J.W.R.
October, 1975

TABLE OF CONTENTS

Page

Task Force Members ii

Acknowledgements iii

List of Tables and Charts xi

Foreword 1

Excerpts from the Charge to the Task Force by T. Edward Hollander, July 30, 1973 5

Analysis of the Supply of Physicians and Related Problems 7

- New York Compared to Other States 7
- Physician Supply Problems 11
- Physician Maldistribution 12

The Foreign Medical Graduate 19

- Foreign Born Graduates of Foreign Medical Schools 19
- United States Born Foreign Medical Students 28

Medical Schools in New York State 33

- New York Medical Schools Compared to United States Schools 33
- Clinical Relationships - Hospitals and Medical Schools 36
- Expansion of Undergraduate Medical Education 39
  - COTRANS 44
  - Fifth Pathway Students 42

TABLE OF CONTENTS (cont'd.)

	Page
Expansion of Enrollment in Medical Schools in New York State in Relation to National Expansion	45
Cost of Medical School Construction	46
Fiscal History and Prospects	48
Institute of Medicine Study -- United States and New York State	48
Geographical Source of Entering Medical Students	50
Retention of Medical School Graduates	63
Physician's Extenders	73
Physician's Assistants	73
Nurse Clinicians	76
Emergency Medical Technicians	78
Impact of Physician Extenders on Physician Requirements	79
Projected Supply and Requirements for Physicians in New York Through the Year 2000	83
Projected Supply of Physicians from Expected Medical School Graduates and Registered Physicians	84
Most Reasonable Supply Assumptions	92
How Do Supply Projections Relate to Need	94
Primary Care Assumptions	94
Other Requirements Assumptions	98
Proportion of Federal Projections	98
High Region Rate	100
Prepaid Practice Plans Model	101

TABLE OF CONTENTS (cont'd.)

Page

Projected Supply and Requirements for Physicians in New York Through the Year 2000 (cont'd.)

Comparisons of Physician Supply and Requirement 101

Specialty Distribution 103

Limitations on Our Ability to Achieve Supply Goals 104

Most Reasonable Assumption 107

Alternative Ways to Increase Medical School Enrollment 113

Progress Toward Expansion of Medical School Enrollment 119

Contract with the University of Vermont Medical School 119

CCNY Biomedical Education Program 122

Proposed Clinical Medical Education at Binghamton 128

Proposed New York College of Osteopathic Medicine 131

Proposed Medical School in Queens 137

Recruitment of Physicians to Underserved Areas 139

The Role of Approved Internship and Residency Training Programs 139

The Role of a "Brokerage" Office 146

The Possible Role of Preceptorships 149

TABLE OF CONTENTS (cont'd.)

Page

Summary of Recent Action on Federal Health Manpower Legislation -- as of September 3, 1975. 153

Labor - HEW Appropriations Bill -- H.R. 8069 153

Comprehensive Health Manpower Legislation 154

Health Professions Loans 158

National Health Service Corps Scholarship Program and Health Professions Scholarships 159

Special Health Revenue Sharing Act of 1975 -- P.L. 94-63 160

Financing Medical Education in New York State 161

Introduction 161

Financing of Independent Medical Schools in New York State 162

Federal Aid to New York State Independent Medical Schools 166

Cost Studies: The Institute of Medicine and Special Studies of New York State Institutions 173

Educational Costs and Sources of Funds of Medical Schools 183

Costs and Financing of Independent Medical Schools 183

Costs and Total Fund Sources of Independent Medical Schools 188

Costs and Financing of Public Medical Schools of New York State 192

Other Factors on Costs and Funding 197

TABLE OF CONTENTS (cont'd)

Page

Principles for Funding Medical Education 203

  Federal Government Support 204

  State Support 206

  Philanthropy and Institutional Sources of Funds 207

  The Student Contribution 208

  Financing of Graduate Medical Education 212

General Summary and Conclusions 215

General Recommendations 225

Summary, Conclusions and Recommendations on Financing Medical Education 233

  Summary and Conclusions 233

  Recommendations on State Financing 237

Appendix A: Program Cost Study for the Associated Medical Schools of New York and New Jersey 246

Appendix B: Program Cost Study for the Six Health Science Centers 286

Appendix C: Bibliography 315

LIST OF TABLES AND CHARTS

		Page
Table 1	International Comparison of Reported Physician-Population Ratios, 1969	8
Table 2	Physician Manpower per 100,000 Population -- Comparative State Rank Using Various Physician Bases, 1972	10
Table 3	Distribution of Physicians in New York by Office of Planning Services (OPS) Regions	13
Map	Ratios of Physicians per 100,000 Population by County and Region	14
Table 4	Number of Physicians Located in the United States....1959 and percentage of Foreign Medical Graduates by State	21
Table 5	Number of Physicians in the United States by State and Percent FMG, 1970	22
Table 6	New Licentiates Representing Additions to the Medical Profession, 1950-1972	24
Table 7	New York Medical Schools -- Enrollment and Graduates, Selected Years	34
Table 8	Number of Graduates from Schools in New York State Compared to Numbers of Graduates from Medical Schools in the United States, Selected Years	35
Table 9	New York State Medical Schools Compared with Clinical Resources by OPS Regions, 1972	37
Table 10	Comparison Between New York and United States Public and Independent Medical Schools	40

LIST OF TABLES AND CHARTS (cont'd.)

		Page
Table 11	Geographic Source of Entering Students (1973-74) in Various States	53
Table 12	Medical Students Studying Out of Home State, 1973-74	54
Table 13	Restrictive Admissions Policies of Medical and Osteopathic Schools, 1973-74 Entering Class	57
Table 14	Medical Student Admissions to New York Medical Schools, 1975-76	59
Table 15	Geographical Source of First Year Students in New York Public and Independent Medical Schools, 1973-74	60
Table 16	1955-1965 U.S. Graduates by State of Graduation and Current State of Practice	64
Table 17	Approved First-Year Residencies Offered in New York State by Specialty and Region	68
Table 18	Analysis of Average Program Cost per Student in Four Physician's Assistant Programs in New York State...1973-74...	77
Table 19	Potential Impact...of Physician Extenders	81
Graph I	...Physician Extenders Potential Impact...	82
Table 20	New York State Physician Supply Projections to 2000	85
Graph II and Graph III	New York State Physician Supply 1972-2000	86
Table 21	Total Physicians Required by 1990 in New York State under Seven Assumptions...	90

LIST OF TABLES AND CHARTS (cont'd.)

		Page
Graph IV	New York State Physicians - Demand/Requirements Projections	91
Table 22	Evaluation of Adequacy of Supply of Primary Care Physicians	97
Table 23	Projected Medical School Enrollment Increases to Meet the 1990 Goal	120
Table 24	New York State Aid to Independent Medical Schools for Support of Education for the M.D. Degree, 1974-75	164
Table 25	Federal Aid to New York State Independent Medical Schools	167
Table 26	Federal Institutional Aid to New York State Independent Medical Schools; Enrollments and Aid Per Student, 1973	169
Table 27	Federal Aid to New York State Independent Medical Schools, 1965-1973	171
Table 28	Education Costs Per Medical Student -- State of New York vs Adjusted Institute of Medicine National Statistics	179
Table 29	Independent Medical Schools of New York State -- Federal and State Aid -- Cost Per Student and Ratios of Public Support, 1973-74	184
Table 30	Enrollment in M.D. Program -- New York State Independent Medical Schools	187
Table 31	New York State Independent Medical Schools Costs and Sources of Funds Per M.D. Student Enrolled, 1973-74	189
Table 32	Percentage Distribution of Funds Shown in Table 31	189

LIST OF TABLES AND CHARTS (cont'd.)

		Page
Table 33	Federal Aid to Medical Schools of the State University of New York, 1973	193
Table 34	Federal Aid to Medical Schools of the State University of New York, 1965-1973	195
Table 35	SUNY Medical Schools -- Costs and Sources of Funds Per M.D. Student Enrolled, 1973-74	196

FOREWORD

The Regents Task Force on Medical School Enrollment and Physician Manpower is pleased to submit its final report to the Regents of the University of the State of New York.

Since it was convened and given its charge in July of 1973, the Task Force has met often. During the intervals between meetings, committees of the Task Force, staff and individual members prepared data, studies and reports for use by the group as a whole. A large body of material was accumulated and this we have attempted to analyze, correlate and distill in ways which might be useful in formulating conclusions and recommendations.

The Task Force met with many individuals including deans of medical schools, economists, sociologists, officials of third party payers, medical students, representatives of hospitals and of professional organizations and with several proponents of new medical schools. Individually and less formally we have consulted with many others. These exchanges have been most helpful.

Our Interim Report was submitted to the Regents and released in October of 1974. That report dealt largely with an analysis of the supply of physicians, the demand for physicians, the problems of geographic and specialty distribution of physicians, the role of the foreign medical graduate, and with medical education in the twelve medical schools in the State of New York. The material contained in the Interim Report has been incorporated into this final report. Thus, the reader need not have the earlier document at hand.

Prior to the preparation of the Interim Report, the Regents Task Force had requested each of the eight independent medical schools to participate in a cost analysis of medical education along the lines of a similar study, published in January 1974, performed by the Institute of Medicine for the National Academy of Sciences at the request of Congress. A similar study had already been initiated by the State University of New York on the four medical schools within its system. Although the contractor for this study had anticipated that the results and conclusions would be available to the Regents Task Force in January of 1975, the data for the study of medical education in the eight independent medical schools only became available to the Regents Task Force in mid-July, 1975, and that for the four SUNY medical schools was transmitted at the end of the first week of August of 1975.

With the results of the cost studies before us, we were able to come to some conclusions and make a number of recommendations on financing medical education.

The general conclusions and recommendations which appeared in the Interim Report have been reproduced in this document with some modifications occasioned by progress in areas dealt with in our original statement. This progress has been outlined in the body of this report.

The problems which we have studied are not those of New York State alone. All have been addressed by groups in other States and by the Federal Government. It is not surprising that from these there have come a number of disparate findings and recommendations. There is in medicine a much quoted aphorism which says that when there are numerous treatments for a particular disease, it usually follows that in reality none is altogether satisfactory. Thus, in formulating our own conclusions and drafting our recommendations, we do not take an obdurate position in their defense against all other opinion. In the areas under discussion there is much room for debate. We trust that it will take place and we hope to have the opportunity to participate.

Medical school enrollment and physician manpower are, of course, only facets of the total health care problem. Nevertheless, we have felt constrained to adhere as strictly as possible to the specifics of our charge. The reader, therefore, should not be lured into expecting a solution to the needs for a health delivery system for the State of New York -- that was not our charge.

Finally, it is of paramount importance that recommendations for State financing not conflict with Federal policies. Uncertainties regarding the most likely content and fate of proposed Federal legislation on health manpower development and financing also have forced delay in the preparation of recommendations in the Final Report. Indeed our recommendations are still under the constraint of not knowing what Federal legislation will contain and when it will be enacted.

EXCERPTS FROM THE CHARGE TO THE REGENTS TASK FORCE ON MEDICAL SCHOOL ENROLLMENT AND PHYSICIAN MANPOWER PRESENTED BY DEPUTY COMMISSIONER T. EDWARD HOLLANDER, JULY 30, 1973

"The Regents have broad responsibility for education and licensure which affects the quality and distribution of health delivery in the State...the Regents have, from time to time, been required to deal with the following specific questions.

--Should the Regents approve applications for charters for additional medical schools?

--Should the Regents encourage the further expansion of existing medical schools by recommending extended State aid programs to accomplish this objective?

--Should the Regents adopt a policy of substituting American-educated physicians for foreign-trained physicians who now receive one-third of the new licenses issued annually by the Department?

--Should the Regents continue to oppose legislation that would reserve a portion of medical school places for students who agree to practice in areas of physician shortage?

--Should the number of county and state medical fellowships that carry a commitment for practice in an area of shortage in the State be expanded?...

"The Regents are sensitive to the fact that the Departments of Health and Mental Hygiene have direct responsibilities for the quality of health care. They recognize also that the private medical colleges and the State University have the more difficult problems of implementing programs that may result from the broader policy statements. The Regents are also concerned that their efforts not overlap with the activities of the Health Manpower Planning Commission. Rather than seek the advice of a broader public group, they specifically requested the advice of the professionals, in and out of government, and sought out this group to help them deal with the policy questions which are within the scope of their responsibilities...

"In summary, my hope is that you can define medical manpower goals and suggest programs that will assure an adequate supply of competently trained medical manpower distributed in such a way that health care is accessible to all residents of the State. Your report should define as precisely as you can the number of physicians and supporting staff, (e.g., associates, assistants, nurses) needed, say by the the year 2000, and their source of supply. You may want to comment on such specific questions as the need for additional medical schools, the possible expansion, if necessary, of existing ones, the state and federal roles in financing and programs for recruitment to areas of physician shortage."

ANALYSIS OF THE SUPPLY OF PHYSICIANS AND RELATED PROBLEMS

One of our major charges was to determine the adequacy of numbers of physicians available. We have examined many criteria for measuring demand and requirements, and have found no universally acceptable criteria to measure the adequacy of the supply of physicians. Nor are there any precise measures of reasonable demand for physicians' services. Nor at our current level of development is there a close correlation between physician manpower ratios and population health.

How can New York State have a physician shortage when only Israel and the U.S.S.R. (Table I) seem to have higher ratios of practicing physicians to population than New York and when New York State has the highest physician to population ratio of any state in the Union, as well as the greatest concentration of medical schools, medical research institutions, and excellent teaching hospitals in this country and probably in the world?

New York Compared to Other States

A convenient and conventional way to measure adequacy of supply has been on a comparative basis. Overall, New York State seems to be in an exceedingly favorable position by this

Table 1

INTERNATIONAL COMPARISON OF REPORTED PHYSICIAN-POPULATION RATIOS 1969

(Number of Physicians per 100,000 Population)

NORTH AMERICA	
Canada	141
United States[a]	155
WESTERN EUROPE	
Austria	182*
Belgium	155
Denmark	145
Finland	95
France	130
Fed. Rep. of Germany	170*
Netherlands	122
Norway	141
Sweden	130
Switzerland	138
United Kingdom:	
England & Wales	121
Northern Ireland	131
Scotland	133
EASTERN EUROPE	
Bulgaria	183*
Czechoslovakia	145
Hungary	191*
Poland	146
Romania	129
Yugoslavia	95
OTHER	
Australia	118
Israel[b]	245*
Japan	111
New Zealand	115
U.S.S.R.	231*

SOURCE: World Health Organization (1972), Table 2.1.

[a] This ratio includes only professionally active physicians. It is not clear whether figures for the other nations have been similarly adjusted.

[b] Includes physicians who are registered in Israel, but do not reside or practice there.

*Denotes nations reporting a higher physician-population ratio than was reported by the United States.

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measure. But one of the great difficulties in assessing comparative data on this topic is the determination of which physicians have been counted. For example, the American Medical Association statistics for New York State attribute over 11% more physicians to the State than the New York State registration files include, and the American Medical Association statistics form the basis for almost all Federal and other studies of this subject. In part, this discrepancy is due to the fact that the American Medical Association tabulates all medical degree holders whether or not they are licensed to practice medicine. Thus, AMA includes many inactive physicians as well as interns and residents in their statistics. Many of these, while present in the State, are not licensed or do not treat patients in New York State.

Generally, when New York State is ranked comparatively, it comes out ahead of all other states. As can be seen from Table 2, depending upon which kinds of physicians are counted, New York State had between 193 and 243 physicians per 100,000 population. However, when New York is ranked against the other states, according to the numbers of graduates of United States medical schools registered in the State, it falls to seventh place with only 151 United States medical graduates per 100,000 population as compared to California with 188 such physicians. In addition, while New York State has granted

Table 2

PHYSICIAN MANPOWER PER 100,000 POPULATION
COMPARATIVE STATE RANK
USING VARIOUS PHYSICIAN BASES
1972

RANK	Physicians[1] (MD & DO)[2] excluding Interns & Residents		MD Physicians Only including Interns & Residents		MD & DO Physicians including Interns & Residents		MD Physicians (only Graduates of Medical Schools in the U.S.)[3]	
	State	Ratio						
1.	D.C.	286	D.C.	423	D.C.	424	D.C.	448
2.	New York	193	New York	239	New York	243	California	188
3.	Massachusetts	172	Massachusetts	213	Massachusetts	216	Colorado	182
4.	California	172	California	198	California	200	Maryland	181
5.	Connecticut	165	Connecticut	196	Connecticut	198	Massachusetts	178
6.	Vermont	163	Maryland	192	Vermont	194	Vermont	166
7.	Arizona	156	Vermont	185	Maryland	193	Connecticut	151
8.	Colorado	155	Colorado	178	Colorado	189	New York	151
9.	Hawaii	154	Rhode Island	167	Arizona	175	Washington	146
10.	Florida	154	Hawaii	165	Rhode Island	175	Wyoming	146
11.	Rhode Island	150	Florida	162	Florida	172	Arizona	143
12.	Maryland	144	Arizona	155	Pennsylvania	169	Oregon	138
13.	New Jersey	142	Pennsylvania	155	Hawaii	168	Utah	138
14.	Pennsylvania	139	Minnesota	151	New Jersey	161	Florida	137
15.	Oregon	137	New Jersey	150	Washington	156	Minnesota	137
16.	Washington	137	Washington	150	Missouri	155	Hawaii	136
17.	Maine	134	Oregon	147	Oregon	154	Pennsylvania	133
18.	New Hampshire	132	Illinois	142	Minnesota	153	Louisiana	123
19.	Delaware	130	Utah	142	Michigan	152	Virginia	123
20.	Missouri	129	New Hampshire	141	Delaware	146	New Mexico	122
21.	Michigan	125	Delaware	139	Illinois	145	Nebraska	119
22.	Nevada	120	Ohio	135	Ohio	145	Tennessee	118
23.	Minnesota	120	Missouri	131	New Hampshire	144	Texas	118
24.	Ohio	119	Virginia	129	Utah	144	Rhode Island	117
25.	Illinois	118	Michigan	128	Maine	139	Kansas	116
26.	Utah	118	Wisconsin	124	New Mexico	133	Nevada	113
27.	New Mexico	116	Louisiana	123	Virginia	130	North Carolina	113
28.	Wisconsin	111	Tennessee	122	Kansas	128	New Hampshire	113
29.	Montana	111	New Mexico	120	Wisconsin	128	Missouri	112
30.	Kansas	109	Kansas	119	Texas	126	Georgia	111
31.	Oklahoma	108	Maine	119	Louisiana	123	Wisconsin	109
32.	Virginia	108	Texas	119	Tennessee	123	Oklahoma	108
33.	Texas	107	Nebraska	118	Nebraska	121	Alaska	105
34.	Nebraska	106	Nevada	116	Nevada	120	Montana	105
35.	Iowa	103	North Carolina	113	Oklahoma	119	Illinois	104
36.	Louisiana	103	Georgia	112	Iowa	118	New Jersey	104
37.	Tennessee	103	West Virginia	109	Georgia	114	Ohio	102
38.	West Virginia	103	Montana	107	West Virginia	114	South Carolina	100
39.	Wyoming	103	Iowa	104	North Carolina	113	Arkansas	99
40.	Idaho	100	Kentucky	104	Montana	111	Delaware	98
41.	Georgia	98	Indiana	103	Indiana	106	Kentucky	98
42.	North Carolina	97	Oklahoma	103	Kentucky	105	Idaho	96
43.	North Dakota	97	Wyoming	101	Wyoming	104	Iowa	95
44.	Indiana	96	Idaho	97	Idaho	100	Michigan	95
45.	Kentucky	92	North Dakota	97	North Dakota	98	Indiana	94
46.	Arkansas	86	South Carolina	97	South Carolina	97	Alabama	93
47.	South Carolina	86	Arkansas	95	Arkansas	96	Maine	91
48.	Alaska	82	Alabama	91	Alabama	91	Mississippi	91
49.	South Dakota	82	Mississippi	83	South Dakota	85	North Dakota	87
50.	Alabama	80	Alaska	81	Mississippi	83	South Dakota	84
51.	Mississippi	75	South Dakota	81	Alaska	82	West Virginia	84

Sources:

[1] All M.D., Intern & Resident, and Population Data compiled from American Medical Association, Distribution of Physicians, 1972, Vol. 1.

[2] Osteopathic Physicians - American Osteopathic Association, Directory of Osteopathic Physicians, 1972.

[3] U.S., Health, Education and Welfare, The Supply of Health Manpower, February, 1974.

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13% of the M.D.'s awarded in the United States, it does not receive its "fair share" of these graduates, since only 9% of all United States medical school graduates in recent history have ultimately settled in New York State (Table 16). Part of this is due, no doubt, to a general population drift to more rapidly growing states. The difference is compensated for by graduates of foreign medical schools, on which New York State has been relying heavily. New York has received more than 25 percent of the recent annual foreign medical graduate (FMG) migrations into the United States, and thus our state is becoming increasingly dependent upon foreign medical graduates to maintain its physician to population ratio. (See Tables 4 to 6 for comparative statistics showing increased dependence of States on foreign medical graduates, 1959 and 1970.)

Physician Supply Problems

On the basis of various models of health care delivery, and using other criteria (which will be discussed in greater detail later in this report), even with New York's high physician to population ratio, there are not enough total physicians to meet the requirements for physicians' services in New York State. Gross State ratios mask needs of areas in the State well below average State ratios.

Physician Maldistribution

In addition to the total shortage of physicians to population, two other kinds of shortages are even more obvious; these both result from maldistribution. The [illegible]perience in New York State is not different from that of the [illegible] states and other countries except, perhaps, in magnitude. Geographic maldistribution is manifested by a more than tenfold difference between counties in New York State in ratio of physicians to population as can be seen from Table 3 and the map; and within most of the counties there is probably an equivalent range of difference.

Factors which influence the choice of practice location of physicians are not very different from those which influence the location of other professionals. As one naturally would expect, physicians tend to congregate around urban and metropolitan centers where there are ample facilities for patient care and referral for all purposes. The most significant underserved areas of the State lie in the sparsely populated or declining rural areas and multiproblem urban areas.

There are studies which show that the prime influence on where a physician elects to settle and practice is the location of his internship and residency training, and not where he went to medical school or even the community in which he

Table 3

DISTRIBUTION OF PHYSICIANS N.Y.S. BY OPS REGIONS

Regions[1]	Population[2] (000) 1972	Registered[3] Physicians 1972	Physician[3] per 100,000 Population	
			Region Rate	County Range
Upstate				
Western	1,372	2,195	160	78 - 177
Genesee-Finger Lakes	1,090	1,869	171	48 - 204
Southern Tier West	272	289	106	65 - 122
Southern Tier Central	213	305	143	131 - 153
Black River/St. Lawrence	261	292	112	64 - 132
Central	762	1,221	160	63 - 204
Southern Tier East	488	731	150	51 - 181
Upper Mohawk	329	467	142	73 - 160
Lake Champlain/Lake George	208	310	149	89 - 225
Upper Hudson	942	1,608	171	61 - 294
Mid-Hudson	1,830	4,367	239	86 - 316
Nassau/Suffolk	2,609	4,769	183	135 - 223
Upstate Subtotal	10,464 [4]	18,423	176	48 - 316
New York City				
Bronx	1,462	2,041	140	NA
Kings	2,585	3,959	153	NA
New York	1,529	10,401	680	NA
Queens	1,974	3,497	177	NA
Richmond	293	543	185	NA
New York City Subtotal	7,843	20.441	261	140 - 680
Total State	18,307	38,864	212	48 - 680

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[1] See map facing page
[2] Source: N.Y.S. OPS population modified by N.Y.S. Health Dept. 1972 count
[3] Source: New York State Education Department Registration files
[4] Includes institutional population not included in Regional totals.

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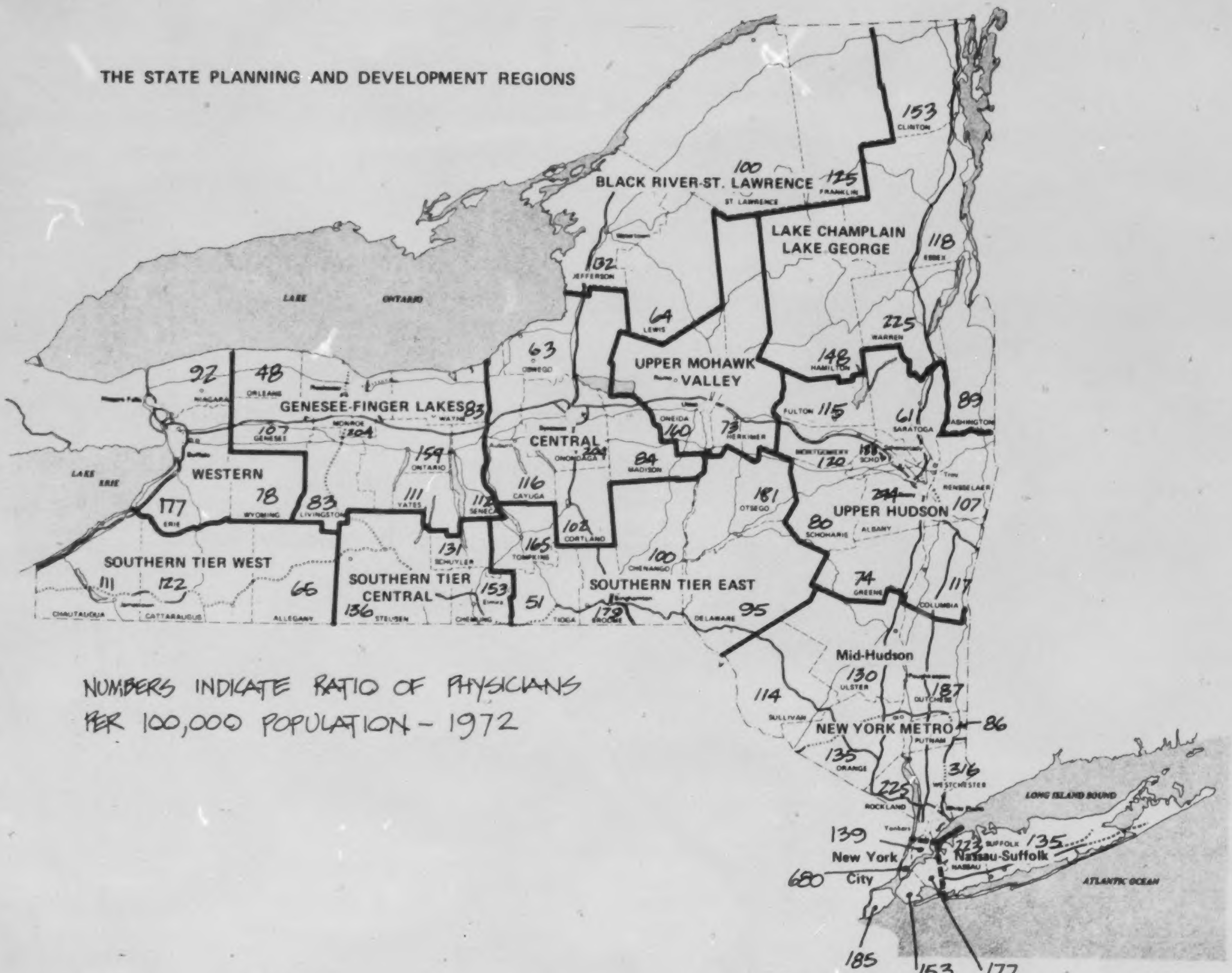

matured. The next strongest factors in influencing physician distribution are the climate of the area and the educational, recreation, social and cultural resources available there for the family. These are influences over which there can be very little control.

Another strong element in the settlement decision is the professional climate. Are there other physicians available with whom physicians can interact, who can "backstop" them, and are there satisfactory hospitals available in which their patients can receive quality care? Other considerations include the State's tax structure and malpractice insurance premiums (which in this State have increased 93 percent in the past year).

The crime and decay in urban problem areas render these locations not only unattractive to physicians as locations for practice, but they are extremely hazardous. Many physicians' offices in these areas are kept locked; would-be entrants are screened; and all sorts of inconvenient and stifling precautions are taken in order to prevent the recurrence of robberies, drug theft, and assault, of both patients and physicians. Until these complex problems are reduced, or at least significantly ameliorated, the urban central cores will remain areas in which proper medical care is either not available to the extent that it should be, or is provided under the most stringent, dangerous, and unpleasant circumstances.

But there is a much larger problem involving the provision of adequate health services to the vast numbers of people living in urban centers who cannot afford to pay for their services yet are not covered by medical assistance programs. By default, the emergency rooms of the hospitals located in these areas are serving as best they can as the sole source of care, primary or otherwise, for these multitudes. Although these hospitals may be reimbursed for services to those eligible for Medicaid, the deficits occasioned by the necessity of writing off the costs to those who are not so covered cannot be long sustained without financial disaster.

Until this problem is resolved (probably by nothing short of universal insurance coverage) there is no reason to believe that any of the Task Force's recommendations will have much impact upon redistribution of health services to this major proportion of the State's population.

Some of the other factors which contribute to the perceived shortage of physicians cannot be reflected at this time in traditional statistics. More physicians are joining group practices and working 40 hour weeks instead of the 60 or even 80 hour weeks which have been traditional for many physicians. Also, more physicians are seeking early retirement.

It is widely held that there are too many surgeons in at least some of the surgical specialties. Certainly there are too few primary care specialists. We need more family practitioners, pediatricians, and internists. The United States has almost the exact reversal of ratios of primary care physicians to specialists as does Great Britain.

The Task Force has inquired of all the American Medical and Osteopathic Specialty Boards about what they are doing, or plan to do, to control the numbers of specialists in their fields in order to meet the needs of the general population for primary and all other specialized care. Some of the specialty boards have conducted studies in this area, and hopefully will be developing criteria for the education and training of numbers of specialists. However, more than half of the Boards have indicated that the control over numbers in their specialty is outside of their function.

Recently we have begun to detect a greater interest in primary care on the part of medical students and graduates. In part, this can be attributed to the founding of the American Board of Family Practice and the American Academy of Family Practice, thus providing a basis for comparable recognition and training for general and family physicians. In 1973, $2 million was appropriated to continue and expand family medicine residency training programs in New York State.

Our findings will show that residencies in the primary care areas should be expanded by close to 10% which is probably beyond the capacity of this appropriation.

THE FOREIGN MEDICAL GRADUATE

We cannot address the subject of adequacy of medical services provided to this State without touching upon the subject of the foreign medical graduate (FMG).

The Task Force is cognizant of substantial and excellent contributions to the health of the people of this State and this country, provided through the expertise of graduates of foreign medical schools who are engaged in medical practice, in teaching of medical students, interns and residents, or who are involved in medical research. Many such physicians have made outstanding contributions to the United States, the world and to their own countries after returning to their homelands. We readily pay tribute to physicians of that quality, and their achievements. However, these are not the foreign medical graduates who are the subjects of increasing concern to the general public and problems to the hospitals. It is those to whom we must now refer.

Foreign Born Graduates of Foreign Medical Schools

There has been a sudden and drastic change in the attitude of the public toward the role of the foreign medical graduate in the delivery of health care in this country, and particularly in this State. Public leaders and professionals in this State, the country and the world in recent months have begun to express concern over the impact and long range implications of FMG migration, their cumulative presence in this country, and our increasing dependence on them.

This issue has been highlighted in the popular press on many occasions. The chief concerns are over the cumulative problems that have resulted from the increasing presence of foreign medical graduates, especially those foreign born and reared, who have come to this country for graduate training and education.

Graduates of foreign medical schools have played an increasingly major role in the delivery of health care in recent years. The number of foreign medical graduates in the United States nearly quadrupled between 1959 and 1972, increasing from 15,000 to 57,000 (comparing Tables 4 and 5).[1] In 1972, FMG's constituted 17% of the total United States physician population and 23% of the registered physicians in New York State, with an estimated range of FMG's from 7% to 47% of total registered physicians among counties in New York. In 1972, FMG's constituted almost half of the new

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[1] As previously noted , AMA counts all M.D.'s. Only registered physicians are in Task Force counts. Thus our 23%, calculated from survey data, is below the estimate of FMG's in New York on Table 5.

Table 4

NUMBER OF PHYSICIANS LOCATED IN THE UNITED STATES, ITS TERRITORIES, OR ON TEMPORARY FOREIGN ASSIGNMENT, CLASSIFIED ACCORDING TO WHETHER THEY ARE GRADUATES OF U.S. MEDICAL SCHOOLS

Mid - 1959

Location of Physicians	Total # of Phys.	Grads of U.S. Schls.	Graduates of other than U.S. Schools				% of Total Grads from Foreign Schls.
			Total	Canadian Schools	Foreign Schools	School Unknown	
Non-Federal Phys:							
Alabama	2,441	2,409	32	14	16	2	0.7
Arizona	1,182	1,112	70	32	36	2	3.0
Arkansas	1,623	1,568	55	7	4	44	0.2
California	23,605	21,727	1,878	662	1,214	2	5.1
Colorado	2,569	2,479	90	21	63	6	2.5
Connecticut	4,075	3,582	493	171	321	1	7.9
Delaware	521	476	45	16	29	0	5.6
D.C.	2,527	2,374	153	33	120	0	4.7
Florida	5,595	5,330	265	84	176	5	3.1
Georgia	3,500	3,442	58	15	43	0	1.2
Idaho	572	563	9	7	2	0	0.3
Illinois	12,477	10,980	1,497	166	1,330	1	10.7
Indiana	4,486	4,368	118	35	83	0	1.9
Iowa	2,728	2,625	103	28	74	1	2.7
Kansas	2,224	2,160	64	24	40	0	1.8
Kentucky	2,638	2,580	58	13	42	3	1.6
Louisiana	3,493	3,459	34	27	7	0	0.2
Maine	976	802	174	100	74	0	7.6
Maryland	4,018	3,618	400	86	314	0	7.8
Massachusetts	8,910	8,206	704	322	369	24	4.1
Michigan	8,482	7,722	760	530	230	0	2.7
Minnesota	4,463	4,192	271	144	125	2	2.8
Mississippi	1,649	1,607	42	11	12	19	0.7
Missouri	4,835	4,669	166	41	123	2	2.5
Montana	629	615	14	10	4	0	0.6
Nebraska	1,520	1,503	17	5	12	0	0.8
Nevada	282	259	23	16	6	1	2.1
New Hampshire	783	658	125	91	34	0	4.3
New Jersey	7,133	6,169	964	155	807	2	11.3
New Mexico	693	656	37	11	24	2	3.5
New York	31,652	24,665	6,987	1,062	5,925	0	18.7
North Carolina	4,142	4,045	97	45	49	3	1.2
North Dakota	499	410	89	61	28	0	5.6
Ohio	11,242	10,187	1,055	252	803	0	7.1
Oklahoma	2,191	2,153	38	13	13	12	0.6
Oregon	2,236	2,189	47	33	12	2	0.5
Pennsylvania	14,818	14,254	564	241	322	1	2.2
Rhode Island	1,044	858	186	53	133	0	12.7
South Carolina	1,810	1,801	9	2	7	0	0.4
South Dakota	481	432	49	7	42	0	8.7
Tennessee	3,581	3,504	77	20	35	22	1.0
Texas	9,282	8,938	344	61	233	50	2.5
Utah	1,081	1,062	19	13	6	0	0.6
Vermont	575	530	45	34	10	1	1.7
Virginia	3,910	3,675	235	44	191	0	4.9
Washington	3,430	3,195	235	140	94	1	2.7
West Virginia	1,638	1,577	61	21	38	2	2.3
Wisconsin	4,059	3,941	118	36	80	2	2.0
Wyoming	270	266	4	2	2	0	0.7
Alaska	109	7	1	5	1	4.6	
Hawaii	620	558	62	19	42	1	6.8
Puerto Rico	1,059	801	258	10	247	1	23.3
U.S. Territories	134	110	24	2	22	0	16.4
Foreign Countries	1,719	1,415	304	137	165	2	9.6
Unknown Locations	1,306	1,104	202	37	135	30	10.3
Federal Physicians	17,519	16,540	979	198	781	0	4.5
All Physicians	241,036	220,222	20,814	5,421	15,154	239	6.3

Source: William H. Stewart and Maryland Pennel, Health Manpower Source Book, Medical School Alumni, Public Health Service Publication No. 263, Section II, Washington, D.C., 1961, Table I.

Table 5

PHYSICIANS IN THE U.S. BY STATE OF PRACTICE AND COUNTRY OF GRADUATION

December 31, 1970

		Country of Graduation					
	Total	United States		Foreign		Canada	
State	(100.0%)	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total	334,028	270,637	81.0	57,217	17.1	6,174	1.8
Alabama	3,377	3,219	95.3	147	4.4	11	0.3
Alaska	324	303	93.5	17	5.2	4	1.2
Arizona	2,938	2,608	88.8	282	9.6	48	1.6
Arkansas	1,955	1,924	98.4	25	1.3	6	0.3
California	41,640	37,476	90.0	2,980	7.2	1,134	2.8
Colorado	4,386	4,076	92.9	259	5.9	51	1.2
Connecticut	6,072	4,617	76.0	1,267	20.9	188	3.1
Delaware	783	543	69.3	217	27.7	23	2.9
District of Columbia	4,073	3,253	79.9	778	19.1	42	1.0
Florida	11,451	9,513	83.1	1,769	15.4	169	1.5
Georgia	5,546	5,088	91.7	434	7.8	24	0.4
Hawaii	1,235	999	80.9	203	16.4	33	2.7
Idaho	718	697	97.1	11	1.5	10	1.4
Illinois	16,323	11,608	71.1	4,542	27.8	173	1.1
Indiana	5,470	4,954	90.6	473	8.6	43	0.8
Iowa	3,061	2,708	88.5	323	10.6	30	1.0
Kansas	2,910	2,582	88.7	299	10.3	29	1.0
Kentucky	3,560	3,192	89.7	346	9.7	22	0.6
Louisiana	4,768	4,476	93.9	261	5.5	31	0.7
Maine	1,186	903	76.1	174	14.7	109	9.2
Maryland	9,518	7,140	75.0	2,249	23.6	129	1.4
Massachusetts	12,576	10,227	81.3	1,998	15.9	351	2.8
Michigan	11,364	8,559	75.3	2,376	20.9	429	3.8
Minnesota	6,145	5,303	86.3	645	10.5	197	3.2
Mississippi	2,077	2,001	96.3	67	3.2	9	0.4
Missouri	6,314	5,283	83.7	982	15.6	49	0.8
Montana	787	743	94.4	30	3.8	14	1.8
Nebraska	1,855	1,777	95.8	70	3.8	8	0.4
Nevada	595	557	93.6	14	2.4	24	4.0
New Hampshire	1,098	857	78.1	145	13.2	96	8.7
New Jersey	10,923	7,565	69.3	3,224	29.5	134	1.2
New Mexico	1,390	1,242	89.4	127	9.1	21	1.5
New York	44,800	27,795	62.0	15,946	35.6	1,059	2.4
North Carolina	6,069	5,696	93.9	311	5.1	62	1.0
North Dakota	660	528	80.0	91	13.8	41	6.2
Ohio	14,740	10,996	74.6	3,516	23.9	228	1.5
Oklahoma	2,899	2,775	95.7	105	3.6	19	0.7
Oregon	3,181	2,981	93.7	141	4.4	59	1.9
Pennsylvania	18,712	15,779	84.3	2,710	14.5	223	1.2
Rhode Island	1,638	1,084	66.2	495	30.2	59	3.6
South Carolina	2,670	2,560	95.9	99	3.7	11	0.4
South Dakota	629	556	88.4	70	11.1	3	0.5
Tennessee	5,022	4,698	93.5	306	6.1	18	0.4
Texas	14,952	13,307	89.0	1,540	10.3	105	0.7
Utah	1,569	1,508	96.1	43	2.7	18	1.1
Vermont	868	756	87.1	71	8.2	41	4.7
Virginia	6,552	5,588	85.4	896	13.7	68	1.0
Washington	5,562	4,939	88.8	429	7.7	194	3.5
West Virginia	1,946	1,465	75.3	463	23.8	18	0.9
Wisconsin	5,588	4,893	87.6	642	11.5	53	0.9
Wyoming	364	346	95.1	13	3.6	5	1.4
Possessions	2,836	1,412	49.8	1,414	49.9	10	0.4
APO-FPO	3,149	2,912	92.5	204	6.5	33	1.0
Address Unknown	3,204	2,070	64.6	978	30.5	156	4.9

Note: Percentages may not add due to rounding.

Source: Haug, J.N.; Roback, G.A.; and Martin, B.C. Distribution of Physicians in the United States, 1970. Chicago, American Medical Association, 1971.

licentiates in the United States (Table 6) and in 1972, for the first time, the number of FMG's entering the United States either as immigrants or as exchange visitors exceeded the number of United States medical school graduates. While in 1972 United States medical schools graduated 9,600 students, 11,400 FMG's entered the United States.[1]

FMG's began coming into the United States in significant numbers after World War II. In an effort to fill their internship and residency positions, and at the same time to meet their staffing needs, FMG's were actively recruited by the hospitals. The influx of FMG's accelerated after 1965. At that time, Congress abolished the origin quotas for immigration and instituted a system of preference with priority assigned to professions in short supply, and physicians were assigned a high priority.

We have compared the incidence of foreign medical school graduates evaluated for licensure in New York State in 1966 with those evaluated in 1971, by area of origin. In 1966, 58 percent came from European and English speaking countries where the quality of medical education more nearly

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[1] The Supply of Health Manpower, op. cit., p.83.

Table 6 NEW LICENTIATES REPRESENTING ADDITIONS TO THE MEDICAL PROFESSION, 1950-1972

Year	New U.S. & Canadian Licentiates	New Foreign-Trained Medical Licentiates		Total New Medical Licentiates	Percentage of New Med. Licentiates Attributable to Foreign-Trained Physicians
		U.S. Born	Total		
1950	5,694	n/a	308	6,002	5.1
1951	5,823	n/a	450	6,273	7.2
1952	6,316	n/a	569	6,885	8.3
1953	6,591	n/a	685	7,276	9.4
1954	7,145	n/a	772	7,917	9.8
1955	6,830	n/a	907	7,737	11.7
1956	6,611	n/a	852	7,463	11.4
1957	6,441	212	1,014	7,455	13.6
1958	6,643	284	1,166	7,809	14.9
1959	6,643	366	1,626	8,269	19.7
1960	6,611	386	1,419	8,030	17.7
1961	6,443	468	1,580	8,023	19.7
1962	6,648	201	1,357	8,005	17.0
1963	6,832	395	1,451	8,283	17.5
1964	6,605	200	1,306	7,911	16.5
1965	7,619	411	1,528	9,147	16.7
1966	7,217	252	1,634	8,851	18.5
1967	7,267	279	2,157	9,424	22.9
1968	7,581	235	2,185	9,766	22.4
1969	7,671	179	2,307	9,978	23.1
1970	8,016	198	3,016	11,032	27.3
1971	7,943	n/a	4,314	12,257	35.2
1972	7,815	n/a	6,661	14,476	46.0

Source: "Medical Licensure Statistics," Journal of the American Medical Association, 216 (1971), 220 (1972), 225 (1973) approximates that offered in the United States. Since that time there has been a major shift. In 1971, we had 85 percent migrating from countries where cultural and sociological standards are vastly different from those in the United States, and less than 15 percent from European and English speaking countries.

New York law, in accord with the policy of professional organizations responsible for maintaining the quality of graduate medical education, requires such physicians to obtain a standard certificate of the Educational Council for Foreign Medical Graduates (ECFMG) prior to entering approved training programs. Many foreign medical graduates are unable to pass the ECFMG examination (necessary for ECFMG certification), or do so only after several attempts, although in scope of medical knowledge required, it equates at about the level that a beginning senior medical student in the United States would be expected to possess.

Part of the FMG's difficulty lies in inadequacies in their written and spoken English communication abilities. Other problems are related directly to quality of their medical education. Most frequently theirs is not comparable to that offered in the United States, because of severe deficiencies in clinical training and experience. Their communication problems, comparative inadequacy of their medical education, cultural differences (which become apparent in their attitudes towards patients), and frequently their stringent financial circumstances, all cause enormous frustrations and serious difficulties for the institutions which employ them.

The increasing numbers of FMG's arriving annually in this country have been partly our fault. United States medical schools have not supplied enough graduates to fill the needs of hospitals, and consequently, the hospitals have had to develop training programs and accept or recruit foreign medical graduates in order to offer the necessary staff services to their patients. While this move was spearheaded by mental hygiene, correctional and other municipal institutions with limited resources, it has spread to a point where the presence of FMG's has become publicly visible and unacceptable.

Although the graduate training programs (internships and residencies) under the direction of the medical schools are excellent and even superior in some instances, there are training programs in non-affiliated institutions which, as educational experiences, leave a great deal to be desired. In the latter, FMG's are employed primarily as house physicians to render care to patients, and are not provided with appropriate education that is relevant to the needs and capacity of their native countries; nor frequently is it of an acceptable quality. These less desirable programs are being phased out because of both professional and economic pressures. (Residencies no longer provide the labor bargains for the hospitals which they did when house staff salaries were 5% or less of their current levels.)

Because this has become such an important national issue, and because some foreign nations are beginning to voice resentment over the brain-drain by developed countries (mainly the United States), they have begun to inhibit or prevent the migration of physicians to this country. The Task Force thus expects that the supply of foreign medical graduates will be diminished substantially over the next decade.

A sudden prohibition against the immigration of foreign physicians would be a major catastrophe to this country.

As the numbers of United States medical graduates increase, due to past, present, and projected expansion in enrollment of United States medical schools, the non-exceptional foreign medical graduate will gradually be replaced; the quality of medical care delivered will be improved, and the concerns of the public over this issue will have been eased. Between countries it is mutually advantageous to have some exchange of physicians, and our recommendations are not designed to preclude such activity. However, to continue to recruit and accept physicians from countries where health standards are far lower than in the United States, is unconscionable, unethical, and should not be continued, even if it had no impact on the quality of care available in the United States.

United States Born Foreign Medical Students

Reliable figures on the numbers of United States students who are studying medicine outside this country and Canada are extremely difficult to obtain. The best available estimates of the total numbers of such students fall between 3,800 and 6,000 for the year 1971-72. It has been estimated that of the 3,000 to 6,000 United States students who are studying abroad, between 25 and 50 percent are from New York State.

In 1973, the Association of American Medical Colleges estimated that 25,000 qualified applicants to American medical schools were not admitted to schools in this country. Many of these then sought their medical education abroad.

The bulk of American medical students studying in other countries do so in Mexico (mostly at the Autonoma Universidad de Guadalajara) and at medical schools in France and Italy. Small numbers of Americans are enrolled in medical institutions throughout other countries of Western Europe. Although some receive excellent medical instruction, it is apparent from scores on examinations that the education many obtain is deficient when compared with that available in the United States or Canadian medical schools. At the present time, such individuals enter the main stream of American medicine by one of three routes:

(1) Traditional: By earning a Doctor of Medicine degree (or its equivalent) from a foreign school and full licensure in the country of medical education, then obtaining the standard certificate of the Educational Council for Foreign Medical Graduates, and then serving in an AMA approved internship and/or residency, and finally by passing the licensing examination;

(2) COTRANS: By passing Part I of the examination of the National Board after two years of pre-clinical medical school instruction abroad, by applying through COTRANS (Coordinated Transfer) Program of the Association of American Medical Colleges, and then being accepted by one of the United States medical schools into their clinical program (typically the third year of medical school) thus

earning an American medical degree, and then passing the licensing examination.

(3) Fifth Pathway: By completing all requirements of the foreign medical school for the Doctor of Medicine degree or its equivalent (with the exception of any internship and/or social service requirements), by earning an acceptable score on either the ECFMG examination or Part I of the National Board examinations, and by being accepted into, and satisfactorily completing, an academic year of supervised clinical training under the direction of a United States medical school "Fifth Pathway" program, and then by passing the licensing examination.

Expansion and improvement of the opportunities for United States students enrolled in foreign medical schools to return to this country (e.g., under COTRANS and Fifth Pathway Programs), and to complete their medical education here, will improve the quality of their education to more nearly equate with an American medical education. However, it must be clearly recognized that such efforts only encourage larger numbers of United States citizens to seek medical education abroad. Because of the increasing United States student pressures on foreign medical schools and for other reasons, the number of places available to United States students has been reduced substantially in some countries and completely eliminated in others. This is necessary to reserve sufficient places for the needs of students in foreign countries and to conserve their countries' supplies of domestic physicians.

MEDICAL SCHOOLS IN NEW YORK STATE

There are currently twelve medical schools in New York State. Of these, four are part of the State University of New York and eight are independent. (They are identified on Table 7 with enrollment and graduate statistics.) With the exception of SUNY at Stony Brook, which began as a "public" school (with its first class entering in 1971), all of the medical schools in New York State had their beginnings as independent medical schools. A comparison between graduates of New York State schools and United States schools is arrayed on Table 8.

New York Medical Schools Compared to United States Schools

Nationally, the mixture of public and independent schools is quite different. Of the 112 medical schools operational in 1972-73, 48 were independent and 64 public. However, nationwide 44% of the entering class in 1972 was enrolled in independent schools. By contrast, in New York State the eight independent schools enrolled 66% of the 1972 entering class. This is the result of the long history of independent medical education in the State and the more recent development of the SUNY system. The resultant constellation of State and independent schools represents

Table 7

NEW YORK MEDICAL SCHOOLS
ENROLLMENT AND GRADUATES
SELECTED ACADEMIC YEARS[1]

	Actual						Estimated			
	1965-66		1970-71		1973-74		1975-76		1980-81	
Medical School	Total Enrollment	Graduates	Total Enrollment	Graduates	Total Enrollment	Graduates	Total Enrollment	Graduates	Total Enrollment	Graduates
Public (SUNY) Schools										
Buffalo	381	91	464	110	505	120	503	139	540	135
Stony Brook	0	0	0	0	48	21	85	36	216	72
Downstate	716	152	817	203	829	205	804	205	864	216
Upstate	367	76	414	99	464	119	471	119	500	140
Total Public	1,464	319	1,695	412	1,846	465	1,863	499	2,120	563
Independent Schools										
Albany	249	61	315	75	382	96	382	110	440	110
Columbia	461	109	524	126	563	136	537	137	588	147
Cornell	333	81	360	90	379	924	376	101	404	101
Mt. Sinai[2]	0	0	164	35	192	54	222	60	357	100
N.Y. Medical College	502	124	521	119	599	165	778	165	660	165
New York University	490	122	563	128	574	138	577	159	680	170
Rochester	284	62	306	74	366	80	353	96	388	97
Yeshiva (Einstein)	370	87	449	120	531	230	695	176	704	176
Total Independent	2,689	646	3,202	767	3,586	991	3,920	1,004	4,221	1,066
TOTAL all N.Y.S. Schools	4,153	965	4,897	1,179	5,432	1,456	5,783	1,503	6,341	1,629

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TABLE 8

Numbers of Graduates from Schools in New York State Compared To Numbers of Graduates from Medical Schools in the United States

Selected Years--Actual and Projected

Academic Year	Number of Medical School Graduates		New York State as a Percentage of U.S.
	U.S.[1]	N.Y.[2]	
Actual			
1960-61	6,994	928	13.3%
1965-66	7,574	965	12.7
1970-71	8,974	1,179	13.1
1971-72	9,551	1,229	12.9
1972-73	10,391	1,232	11.8
Estimated			
1973-74	10,744	1,456	13.6%
1974-75	11,719	1,592	13.6
1975-76	12,680	1,503	11.8
1980-81	14,130	1,629	11.5

Sources:

[1] United States Actual Graduates (1960-73) from JAMA, November, 1973. Vol. 226, No. 8. "Medical Education", reprint. U.S. Estimates-Basic Projection, Page 71 (1973-4 to 1980-81) from U.S. Department of Health, Education and Welfare, Division of Manpower Intelligence, The Supply of Health Manpower, February, 1974. (Prepublication edition).

[2] Actual - Sum of Individual School Estimates from Part II of Liaison Committee on Medical Education Annual Medical School Questionnaire, 1972-73.

REB:MM
10/21/74

Table 7 Footnotes

[1] Source: Reports of Individual Schools to State Education Department. and Part II Liaison Committee...Questionnaires.

[2] Affiliated with The City University of New York but financially autonomous and self-supporting under its own Board of Trustees.

a major resource in terms of education, (12% of all first year places in the country), service and research. All medical schools have a vital impact nationally, as well as in the State and in the local areas where they are located. The development of high quality medical schools nationally and in New York State has been linked closely to major population centers, since the teaching of clinical medicine requires access to a wide range of facilities for the treatment of hospitalized and ambulatory patients. Thus, it is not surprising that the largest aggregation of medical schools in this State is in the New York City metropolitan area, and that those located outside that area are situated in other larger urban concentrations having both the necessary population density and clinical facilities to meet educational requirements. The medical schools outside New York City are fortuitously dispersed in a way that provides easy access from most areas, leaving only two urban regions (centered in Binghamton and Utica), the sparsely populated northern and southern tier regions plus the central Hudson Valley, without medical schools.

Clinical Relationships - Hospitals and Medical Schools

Although the numbers of hospitals and hospital beds (Table 9) give some indication of the potential of a vital

TABLE 9
NEW YORK STATE MEDICAL SCHOOLS
COMPARED WITH
CLINICAL RESOURCES BY OPS REGION, 1972

OPS Region	Population[1] (000)	Medical Schools Number	Medical Schools Enrollment Academic Yr. Beginning '72	Hospitals Number[2]	Hospitals Total Beds	Hospitals # with Approved Graduate Programs[3]	Hospitals # of 1st yr. Residencies[3]
Upstate							
Western	1,372	1	506	24	6,636	13	202
Genesee-Finger Lakes	1,090	1	366	22	3,562	6	205
Southern Tier West	272	0	0	11	1,192	0	0
Southern Tier Central	213	0	0	7	1,059	0	0
Black River/St.Lawrence	261	0	0	14	1,419	0	0
Central	762	1	464	13	2,572	2	120
Southern Tier East	488	0	0	15	2,227	3	33
Upper Mohawk	329	0	0	9	1,316	1	9
Lake Champlain/Lake George	208	0	0	9	1,023	0	0
Upper Hudson	942	1	382	21	4,025	6	102
Mid-Hudson	1,830	0	0	46	8,061	15	71
Nassau/Suffolk	2,609	1	48	30	7,113	7	273
Subtotal Upstate	10,464[4]	5	1,766	221	40,205	53	1,015
New York City							
Bronx	1,462	1	532	19	5,853	11	NA
Kings	2,585	1	829	37	11,035	19	NA
New York	1,529	5	2,323	45	18,661	28	NA
Queens	1,974	0	0	21	6,866	8	NA
Richmond	293	0	0	4	911	3	NA
Subtotal New York City	7,843	7	3,684	126	43,326	69	2,491
Total New York State	18,307	12	5,450	347	83,531	122	3,506

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[1] OPS data modified by Health Department census

[2] Hospital data and number of beds compiled from N.Y.S. Department of Health, Health Facilities Directory, 1973. Vol. 1.

[3] Includes psychiatric residencies and programs in state mental hospitals whose beds are not included in the column in which numbers of beds are tabulated.

[4] Includes institutional population not included in regional totals.

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component of the medical education environment, they do not tell the whole story. The development of teaching hospitals, suitable for the whole spectrum of medical education, depends on many factors which require strong commitments of personnel and funds, both by the schools and the hospitals, and a determination by both to create the kind of educational environment necessary for the education of physicians and other health professionals.

Close alliances between medical schools and their major teaching hospitals have made modern health sciences centers. These, together with affiliations with other hospitals and facilities, sometimes at some distance from the centers, though often less closely knit, play an important role in some part of the undergraduate and graduate education process and the development of high quality professional and patient care resources. Not infrequently, "minor" affiliations develop, over the years, into major alliances. Thus, a hospital affiliated with a medical school, largely in relation to graduate (intern and resident) training, develops such a strong educational program that the next step is the formation of a major alliance.

Expansion of Undergraduate Medical Education

Beginning in the second half of the last decade, a massive program of expansion of undergraduate medical education (M.D.) was undertaken in the United States. During that decade, a number of public and private commissions had reached the conclusion that a physician shortage existed, a point of view which came into public focus as a result of the new demands upon the health delivery system consequent to the passage of the Medicare Act. Stimulated and aided by financial support from federal and state governments, public and independent medical schools began to increase their enrollments, and new schools developed and began operation. In that period there was a national average annual increase in medical school places of 1.5% (1.3% per year in New York State).

During the period between the academic years 1966-67 and 1973-74, first year enrollment in medical schools in the United States increased from almost 9,000 to almost 14,200, a 58% increase. (In that same period, New York State first year enrollment increased from 1,120 to 1,540, a 38% increase.) By 1977-78, according to current estimates, this figure will be greater than 15,500, a nationwide increase of about 73% over 1966-67.

The expansion of public medical education in the nation has been more extensive than that of independent medical education, though both sectors have made major contributions to the total. The following figures summarize the situation:

TABLE 10

Comparison Between New York and United States
Public and Independent Medical Schools

	Public Medical Schools				Independent Medical Schools			
	Number of Schools		First Year Enrollment*		Number of Schools		First Year Enrollment*	
	U.S.	NYS	U.S.	NYS	U.S.	NYS	U.S.	NYS
1966-67	46	3	4,830	416	43	7	4,134	704
1972-73	65	4	7,833	508	49	8	6,020	1,032
Increase	19	1	3,003	92	6	1	1,886	328
Percent Increase	41%	33%	64%	22%	14%	14%	45%	46%

Footnote: *In any compilation of enrollment figures, differences of 1 to 2% are common, resulting from the fact that time of reporting varies from survey to survey.

The expansion of enrollment in New York State is being accomplished at a similar rate and pattern to that in the United States; it involves the existing schools as well as the two new schools, one public and one independent.

In the past ten years, seven independent schools (Mt. Sinai not counted) have responded by increasing their aggregate entering class size by 308 students, a 43.2% increase, the equivalent of not just one but of three new medical schools. During this same period, and without a mandate to do so, these same seven independent medical schools increased their aggregate entering class admission of New York residents by 184, an increase of 37.3%. The State has received not only a full return on its investment but very much more. In this same period Mt. Sinai Medical School was added.

The three SUNY medical schools in existence in 1965-66 admitted a total of 402 students of whom 356 (88.5%) were New Yorkers. Ten years later these same three institutions granted admission to 471 students, an increase of 69 students (17%), of whom 453 or 96% were New York residents. In that same ten year period the medical school at SUNY-Stony Brook was established.

COTRANS

In the 1975-76 academic year 66 COTRANS students (who have had at least their basic medical sciences in a foreign medical school) have been enrolled in the third year in five New York independent medical schools. Similarly nine such students have been enrolled in three of New York's public medical schools. This year, then, a total of 75 COTRANS students are in New York schools. Every independent medical school either has a COTRANS program or is seriously contemplating one if necessary funding is forthcoming.

Fifth Pathway Students

A total of 84 Fifth Pathway students are currently enrolled in three of the four New York public medical schools and in two of the New York independent medical schools.

The combined students in COTRANS and Fifth Pathway therefore, add 159 students in New York medical schools, the equivalent of a graduating class of an additional medical school.

An important factor in the expansion of medical school enrollment was a decision by the State seven years ago to reimburse the schools for the costs incurred by increasing the aggregate size of their classes to the equivalent of one additional medical school; thus the independent schools would relieve the State of the much greater cost of building and operating a new medical school. Contracts were written between the State University and the schools providing for the support of these programs in the amount of $6,000 for each additional student enrolled, over the number of students enrolled during the years 1961-66, to a maximum of 25 students per class in each school for five years beginning in 1967-68. In addition to this support of operational costs, matching capital funds for expansion of facilities were made available according to a formula that made available between two and five million dollars in State aid monies for capital expansion for each private school depending on student capacity.

These contracts (which were transferred to the State Education Department by legislative action in 1973) were due to expire at the end of the 1973-74 academic year, but legislation recommended by the Regents in 1974 extended operational support for an additional year and authorized continuation of entitlement to construction funds for schools which had previously been unable to make full use of this provision of the contracts.

In recommending extension of contractual aid, the Governor stressed the interim nature of this action in anticipation of recommendations by the Regents Task Force for a more permanent formula for State aid to the independent schools. (In addition to support under the contracts, the State currently provides fiscal support to the schools through two other major programs: Bundy support at the rate of $3,000 for each M.D. awarded and capitation payments at the rate of $1,500 for each student enrolled exclusive of those covered in the expansion contracts with appropriate inflation for students enrolled in time-shortened programs. The law enacted in 1974, upon Regents recommendation, authorized the increase of capitation awards to $2,500 for students in the third and fourth year classes to encourage expansion by enrolling more upper-division transfer students.)

Although the expansion of enrollment in the three previously existing medical schools in the SUNY system has been less extensive than that in the seven existing independent schools, the State made a large commitment to increase the public school role by establishment of the campus at Stony Brook. The medical school at Stony Brook is still in the process of development, and appropriate funding of that school and the three older SUNY schools will permit realization of the vitally needed full potential of each of the medical schools in the State University system.

As plans are developed to increase medical school capacity, adequate funding for capital and operating programs will have to be provided. Preliminary analyses suggest that none of the twelve schools in the State can expand their enrollments even up to projected levels (Tables 7 and 20) without additional funding. Long term planning for medical school financing requires solid bases and continuity. We hope the data in this report will provide the foundation for proper planning.

Expansion of Enrollment in Medical Schools in New York State in Relation to National Expansion

Although the percent increase in medical school enrollment in New York State has been, and is, anticipated to continue to be somewhat below that of the national total, this must be viewed in the context of the position of New York State at the time the expansion began. Thus, in 1966-67, the first year enrollment of the schools in New York constituted 12.5% of the national total (at a time when the population of New York State was approximately 9% of that of the nation). The fact that New York's share of first year enrollment has fallen to approximately 11% reflects, in large measure, the efforts by states whose starting position was of far lower order than that of New York and by those which hitherto had had no medical school at all.

It is, of course, obvious that the major effect of the enrollment expansion both in New York State and in the nation as a whole has yet to make impact upon the number of physicians in practice. Classes which entered in 1970-71 will begin to appear on the scene in another two or three years upon completion of residency training.

Cost of Medical School Construction

The following figures were obtained from the DHEW, Office of Institutional Construction Loans for the Health Sciences. That office has been making Federal loans for the construction of teaching facilities and hospitals since 1962, and the figures cited below are based on their cumulative experience which is kept currently updated. The estimates apply only to construction for teaching medical students; no allied health, nursing, or graduate student facilities are included.

At the very minimal, bare-bones level for 100 students, a basic science facility, clinical science facility and library would require 380,000 gross square feet. A 500-bed teaching hospital would require 500,000 gross square feet for a grand total of 880,000 gross square feet at $95 per gross square foot construction cost, which is the current New York cost. This figure does not contain any movable equipment within the building or books for the library. The movable equipment will add 10 to 12 percent of the total cost of construction. To the current cost also must be added an escalation rate of 8 percent per year, which is calculated conservatively here to be 30 percent over the period of construction. A more elaborate facility for the same number of students would encompass a grand total of 1,200,000 gross square feet. On the above parameters for 100 medical students the cost at the minimum level would be $119,548,000 to $122,000,096. For the more elaborate facility the total cost for 100 students would be $163,020,000 to $165,984,000.

For 150 medical students the comparable costs would be for the minimal level of $179,322,000 to $183,144,000 and for the more elaborate model $244,530,000 to $248,976,000.

The above DHEW cost figures have been regarded by knowledgeable people in New York State as being ultra-conservative. Some even believe the cost estimates may be understated by as much as 50% in the present fiscal climate.

The University of Louisville is currently replacing its 380 bed teaching hospital at a cost of $52,000,000; on the basis of the calculations outlined above the hospital should have cost only $36,100,000.

The Health Sciences Center at Stony Brook is now predicated to run between $225,000,000 and $250,000,000 which includes $80,000,000 for the less than 500 bed hospital. The Health Sciences Center, however, is also designed to accommodate other students than purely medical students, such as those in allied health, nursing and dentistry.

Fiscal History and Prospects

In recent years, especially in the 1960's, funds flowed freely for innovation but rarely for long term implementation. This has led the schools into a most uneasy
7 situation exacerbated by the current national economic situation with rising costs, shrinking endowments and the resultant retrenchments now in progress in both the public and private sectors. When the effects of inflation and the erosion of endowments (both by depreciation and the necessity for invasion of endowment funds experienced by some schools) are added to the previous inconsistencies of funding, unease in the medical schools has moved to acute anxiety. Preliminary analyses suggest that without major changes in funding there is a potential for total economic collapse in most, if not all, of the eight New York State independent medical schools by 1985. The Task Force believes this is an extremely critical issue, since we cannot afford to reduce or lose any of these twelve institutions.

Institute of Medicine Study - United States and New York State

The Institute of Medicine (IOM) of the National Academy of Sciences recently concluded a two year study as a result of a Congressional mandate, which included a comprehensive analysis of the cost of educating major health professionals including physicians. Fourteen medical schools across the country, including one from New York composed their sample. While the IOM found the annual educational cost range to be between $7,000 and $19,000, an Association of American Medical Colleges study released earlier indicated costs of up to $25,000 per student per year.

The four SUNY medical schools, under contract with the same firm which collected data for the IOM study began conducting a similar study using the IOM methodology in the late spring of 1974.

Because of the spread in costs found by earlier studies, and because of the diverse nature of the twelve medical schools in this State, the eight independent medical schools and all four dental schools were asked to participate in an identical study under contract with the same firm engaged in the SUNY project.

The Task Force believed that only with specific data from our own medical schools could rational and fiscally responsible proposals and requests be made for legislative consideration and action. The necessity for such a cost analysis was felt to be particularly critical in light of shrinking Federal resources and the controversy at the Federal and State levels concerning the appropriate funding of medical education.

Geographical Source of Entering Medical Students

From data available it is apparent that aspiring medical students from New York, compared with residents of other states, fare well both in their own State and in the nation as a whole. In fact, in 1973-74 (which is typical of the past decade), New York had 1,809 natives enrolled in first year classes of United States medical schools and only 1,540 positions in its own twelve medical schools. While New York absolutely and proportionately has the largest number of its students enrolled in medical schools in the United States, this is in part due to the fact that it remains a debtor state. The Task Force also notes that 13% of all the entering students in medical schools in the United States in 1973-74 were residents of New York State, which has approximately 9% of the population of the nation. In the same year, 67% of the students entering New York independent medical schools and 92% entering public medical schools in the State were residents of New York State. (This compares with 64% and 87% respectively, for 1972-73.) For the nation as a whole 51% of students entering independent schools and 88% of those entering public schools were from their home states.

In the last few sessions of the legislature a number of bills have been introduced which would have placed quotas or extreme limitations on the numbers of non-New York students who could be admitted to New York medical schools. Some of these proposals were punitive in their construction because they would have withheld or stringently curtailed state funds from schools which admitted more out-of-state students than the bills specified.

The Task Force commends those legislators whose understanding of the problems that would flow from such legislation prevented them from recommending passage of such bills; we trust they will continue to be able to convince other colleagues of the real potential damage to New York's students and medical schools if such legislation were to be enacted.

New York is a major debtor state; that is, more New York residents were admitted in 1973-74 to out-of-state medical schools (656) than out-of-state students admitted to New York medical schools (387). To restrict admissions to New York residents in law or in policy only would precipitate reciprocal exclusions in other states, thus penalizing New York students.

Of course most states, especially in their public medical schools, favor their own residents, and so does New York. This is only fair. Such a tendency is less obvious among the independent medical schools, but even so, New York's independent schools have a higher average of in-state students (66.4%) than California's independent schools (55.1%), and Illinois' independent schools (54.6%) (see Table 11). These states have the largest numbers of medical schools; some states with fewer schools, and states with no public schools or with no independent schools are also included for comparison in Table 12.

For the academic year 1973-74 admissions of New York residents to New York State's public medical schools were 91.9% in comparison to 88.3% for California, 98.1% for Illinois, 90.4% for Texas and 88.6% for Ohio. Data from various other states are compared also in Table 11. It is apparent that the states with only one or two medical schools tend to be more restrictive. By comparison with its closest competitor, New York has a higher percentage of its residents in its own medical schools than any other state has of its residents in its own state schools.

In order to show clearly the numbers of students from each state who study medicine in independent and public medical schools in other states, these figures are calculated from the 1973-74 Medical Education supplement to JAMA and are compiled in Table 12. A quick glance at these data presents the following information. Ranked in order, the ten states with the largest number of students studying

Table 11

GEOGRAPHIC SOURCE OF ENTERING STUDENTS (1973-74) IN VARIOUS STATES

	Private Medical Schools					Public Medical Schools					Combined Totals		
	Schools	In State	Out of State	Total	% in State	Schools	In State	Out of State	Total	% in State	In State	Schools	% in State
New York	8	686	346	1032	66.4	4	467	41	508	91.9	1153	1540	74.8
California	3	203	165	368	55.1	5	464	61	525	88.3	667	893	74.6
Illinois	5	309	256	565	54.6	2	323	6	329	98.1	632	894	70.6
Pennsylvania	7	765	252	1017	75.2	0					765	1017	75.2
Texas	1	117	49	166	70.4	5	510	54	564	90.4	627	730	85.8
Ohio	1	83	56	139	59.7	3	358	46	404	88.6	441	543	81.2
New Jersey	0					2	169	35	204	82.8	169	204	82.8
Wisconsin	1	80	41	121	66.1	1	151	10	161	93.7	231	282	81.9
Maryland	1	16	104	120	13.3	1	143	3	146	97.9	159	266	59.7
Tennessee	2	28	149	177	15.8	1	203	4	207	98.0	231	384	60.1
Missouri	2	87	196	283	30.7	2	145	5	150	96.6	232	433	53.5

Calculated from data in Appendix 1, Tables 5 & 6, 74th Annual Report on Medical Education in the U.S. 1973-74

Table 12

MEDICAL STUDENTS STUDYING OUT OF HOME STATE*
1973-74

From State	in Independent Schools	in Public Schools	Total
Alabama 1	27	11	38
Alaska 1, 2	2	8	10
Arizona 1	17	11	28
Arkansas 1	4	6	10
California	261	72	333
Colorado 1	34	10	44
Connecticut	114	13	127
Delaware 1, 2	25	2	27
District of Columbia	67	8	75
Florida	76	12	88
Georgia	40	12	52
Hawaii 1	11	7	18
Idaho 1, 2	3	23	26
Illinois	111	35	146
Indiana 1	60	8	68
Iowa 1	13	6	19
Kansas 1	16	5	21
Kentucky	15	5	20
Louisiana	26	4	30
Maine 1, 2	15	12	27
Maryland	128	20	148
Massachusetts	103	40	143
Michigan 1	63	12	75
Minnesota	28	6	34
Mississippi 1	18	6	24
Missouri	46	14	60
Montana 1, 2	7	18	25
Nebraska	13	3	16
Nevada 1	4	3	7
New Hampshire 2	7	6	13
New Jersey 1	330	32	362
New Mexico	14	8	22
New York	541	115	656
North Carolina	27	7	34
North Dakota 1	11	4	15
Ohio	120	24	144
Oklahoma 1	16	14	30
Oregon 1	22	5	27

Table 12 (Cont.)

MEDICAL STUDENTS STUDYING OUT OF HOME STATE*

1973-74

From State	in Independent Schools	in Public Schools	Total
Pennsylvania	148	26	174
Puerto Rico 1	8	2	10
Rhode Island 2	15	6	21
South Carolina 1	27	8	35
South Dakota 1	7	3	10
Tennessee	28	8	36
Texas	38	29	67
Utah 1	16	3	19
Vermont 1	5	1	6
Virginia	60	8	68
Washington 1	58	4	62
West Virginia 1	12	6	18
Wisconsin	44	6	50
Wyoming 1, 2	6	11	17
	2907	728	3635

*Calculated from data in Appendix I, Tables 5 & 6, 74th Annual Report on Medical Education in the U.S., Journal of the American Medical Association.

1 Had no independent medical school in 1973-74
2 Had no public medical school in 1973-74

medicine outside their home states are:

New York	656
New Jersey	362
California	333
Pennsylvania	174
Maryland	148
Illinois	146
Ohio	144
Massachusetts	143
Connecticut	127
Florida	88

New Yorkers have been very fortunate to have gained so many admissions outside of their own state. If New York had restricted admissions to its own residents for the year 1973-74, then the 387 students (including 9 foreign students) from out of state presumably would have been replaced by New Yorkers; and if the other states had retaliated by reciprocal restrictions on New Yorkers, then a net difference of 269 New Yorkers would have been denied a medical education in that year alone in the United States.

Table 13 shows the medical schools both public and independent which have the most restrictive admissions policies. It also reveals that even in these institutions New York residents were admitted. If these most restrictive schools had closed their admissions to New Yorkers last year, in retaliation for legislative restrictions on admissions in New York State, 63 New Yorkers would have been denied admission in these out-of-state schools.

Table 13

RESTRICTIVE ADMISSIONS POLICIES OF MEDICAL* AND OSTEOPATHIC** SCHOOLS
(1973-74 Entering Classes)

		Schools
Of 49 independent medical schools:	with no out-of-state students	0
	with 15 or less out-of-state students Miami, Mayo, Eastern Virginia, Pittsburgh, Rush Hershey, Louisville (of these 6 schools accepted 20 New Yorkers)	7
Of 64 public medical schools:	with no out-of-state students Arkansas, S.Florida, S. Illinois, Louisiana-Shreveport, Mass., Puerto Rico, S.Dakota, Texas Tech.	8
"	with 15 or less out-of-state students (of these, 16 schools accepted 40 New Yorkers)	38
Of 7 osteopathic medical schools	with no out-of-state students:	0
" " "	with 15 or less out-of-state students: (accepted 3 New Yorkers)	1
Total New Yorkers accepted by most restrictive schools		63

* Data reported in Tables 5 & 6, Appendix I of the 74th Annual Report on Medical Education in the U.S., 1973-74, Journal of American Medical Association, Suppl. Vol. 231, 1975.

** Data provided by American Association of Colleges of Osteopathic Medicine

Clearly the present policies are not out of line with those of comparable states, in fact New York is better off than the others in this regard. Even so, the New York schools, public and independent, raised their admissions of New York residents for the 1975-76 class to 78.0% as revealed in Tables 14 and 15. The independent schools averaged a gain of 7.5% over the year 1973-74, 69.5% New Yorkers, and the public schools averaged 95.4% New Yorkers.

The medical schools located in New York City have admitted students from the metropolitan area but outside of New York State, that is from southern Connecticut and northern New Jersey. After all many of the medical school staff, hospital employees, and, indeed, many patients come from just over the line. One hundred and forty two students from New Jersey and Connecticut were admitted to New York medical schools in 1973-74. Both New Jersey and Connecticut have recently embarked on an expansion of medical education which will increase significantly their own physician output.

As an argument against providing capitation support to independent medical schools in the State on the basis of any out-of-state residents which these schools have admitted, the statement is often made that New York State should not subsidize the education of non-residents.

As is true of other fields of education, a substantial

Table 14

MEDICAL STUDENT ADMISSIONS TO NEW YORK MEDICAL SCHOOLS, 1975-76*

Independent Schools	Total in 1st yr. Class	N.Y. residents	Out of State	% N.Y. residents	COTRANS	5th Path.
Albany	108	86	22	79.6	(a)	
Columbia	147	90	57	61.2	1(b)	
Cornell	101	63	38	62.3	20(c)	
Einstein	191	146	45	76.4	(d)	
Mt. Sinai	80	59	21	73.7	15	4
New York Medical	181	121	60	66.8	26(e)	
New York Univ.	170	130	40	76.4	4	19(f)
Rochester	99	54	45	54.5	(g)	
Totals	1077	749	328	Average 69.5	66	23

Public Schools						
Buffalo	135	129	6	95.5	5	7
Downstate	216	204	12	94.4	2	15
Upstate	120	120	0	100.0	2	
Stony Brook	48	44	4	91.6		39
Totals	519	497	22	Average 95.4	9	61
(All schools) Grand Totals	1,596	1,246	350	82.4	75	84

(a) - could add 30 at cost of $1,000,000
(b) - willing to add more if funded
(c) - will add another 20 if funded
(d) - will start program if funded
(e) - includes 17 N.Y.S. students; could add 30 more for $400,000
(f) - may increase with another hospital
(g) - under consideration

*Data provided by the medical schools.

Table 15

GEOGRAPHICAL SOURCE OF FIRST YEAR STUDENTS IN NEW YORK PUBLIC AND INDEPENDENT MEDICAL SCHOOLS,

1973-74

Source	Public	Independent	Total
In-State	467 (91.9%)	686 (66.5%)	1153 (74.9%)
Out-of-state	39 (7.7%)	339 (32.8%)	378 (24.5%)
Foreign	2 (.3%)	7 (.6%)	9 (.6%)
Total Number of First Year Students	508	1032	1540

1975-76

Source	Public	Independent	Total
In-State	497 (95.7%)	749 (69.5%)	1246 (78.0%)
Out-of-State	22 (4.2%)	328 (30.4%)	350 (21.9%)
Total Number of First Year Students	519	1077	1596

Source: Data calculated from Tables 5 and 6, Appendix I, of the 74th Annual Report on Medical Education in the U.S. 1973-74, Journal of American Medical Association Suppl., Vol. 231, 1975.

part of every medical student's education is subsidized. How this is done, of course, varies from school to school and from state to state. The 656 New Yorkers (see above) who are admitted to out-of-state schools are heavily subsidized in, if not by, the state in which they study. Similarly, the 387 residents of other states admitted to schools in New York State are subsidized by private and federal as well as by state funds.

If one takes an average net education expenditure of $11,000 per medical student per year and deducts, say, $3,000 for tuition, then it follows that each student is subsidized at the rate of about $8,000 per year (exclusive of any direct subsidy in the form of student aid). The 656 New Yorkers studying in other states then are being subsidized elsewhere at a figure of more than $5 million a year. On the other hand, the 387 non-residents admitted to medical schools in New York State receive an aggregate subsidy of about $3 million a year.

In a real sense, then, New York comes out very well in terms of both money and student education as the result of the interstate movement of medical students. This information confirms the wisdom of the legislature in resisting attempts, well-intended though they may be, to impose rigid restrictive or exclusionary policies on admissions to New York medical schools.

Another major factor to consider is that the private medical schools solicit endowment funds, scholarship and loan funds, and other monies from their alumni and friends in all states, not just from New Yorkers. Clearly, it is to their advantage to be able to grant admissions to some qualified students from other locales. The money thus donated to New York's independent schools benefits more New York residents than it does out-of-staters.

It has been shown definitely that the location of the medical school from which a student graduates is not the determining factor for eventual practice location. Indeed, far more important is the location of residency training. We must argue, therefore, that to bring out-of-state students into New York's schools, may increase the number of out-of-staters who will come to or remain in New York for their residencies, and thus, most probably, increase the number of physicians who will practice in New York.

If the goal is to educate more physicians who will practice in New York, then from these data it is apparent that offering education in New York medical schools to some out-of-staters (roughly 25%) is a practice which later may locate them in a New York hospital residency program, and hence more likely retain them to practice in New York. It is also obvious that because of the exceedingly large number of New Yorkers studying out of state that additional places should be provided in New York medical schools.

Retention of Medical School Graduates

In the period 1955 to 1965 although New York State awarded 13% of the M.D.'s given in the United States, only 9.5% of all graduates of United States medical schools in the same period were found in New York State in 1967. New York State therefore manages to retain only 74% of its "fair share," when the fair share is defined as the same proportion of physicians graduating from United States schools as are produced by that State. Actually, only 35% of the graduates of New York State schools (and this is not dissimilar to that of other states) settle in the State. The other half of the United States graduates who settle in New York State were graduates from schools in other states of the United States.

Earlier we noted that place of undergraduate (M.D.) medical education is one of the less significant events in physicians' practice place choice. While there may be many reasons for increasing medical school enrollment in the State, from this data and other data available, this alone will

TABLE 16

U.S. Medical Schools
1955-1965

Graduates by State of Graduation and Current State of Practice

	All U.S.	Only NYS	NY as % of U.S.
Currently practicing physicians graduated 1955-1964 from medical schools located in	68,623	8,822	12.8%
Physicians who graduated from U.S. medical schools 1955-1964 practicing in	68,623	6,500	9.5%
Percent of Total	100%	74%	

Source: C. Theodore, et al., Medical School Alumni, 1967
AMA, Chicago, 1968.

neither increase the supply of physicians in New York State proportionately nor guarantee New York students greater access to medical education.

Graduate Medical Education

Graduate medical training (internship and residency), which is, of course, a vitally important part of the continuum of medical education, is of importance to the State because of the great amount of patient care (both in hospital and in out-patient facilities) which it provides. A strong house staff training program in a hospital is a major addition to the quality of care which the hospital provides to its patients who are assured of the 24 hour availability of these physicians.

Moreover, there is a strong correlation between the area in which a physician receives his graduate training and that in which he ultimately practices. Although a medical student may seek graduate training in a particular state because he is considering locating there permanently, others seek what they consider the best possible training program for which they can successfully compete, and ultimately decide to practice in the area in which that training took place. It is, therefore, in the State's interest to provide the greatest number of high quality graduate training programs which circumstances will permit. The quality of a program is determined by many factors and there is room for differences of opinion as to how it is best measured. But the fact that a program enjoys a strong competitive position among the pool of applicants says much for its quality. There is strong feedback to medical students regarding assessment of a program's merits by their predecessors. These latter base their opinions on a number of factors including: the clinical ability of the staff physicians in the hospital; the dedication of time and effort by these physicians to house staff teaching; the quality of professional and ancillary services, etc.

Paramount among the ingredients which medical students seek in evaluating programs for their graduate training is undoubtedly the existence in a hospital of a strong educational program which in turn depends on the presence of a group of skilled clinical teachers who have not only the ability to teach and supervise but who are willing and able to devote the necessary time to house staff training. Teaching rounds take far more time than that necessary for patient care alone, and the organization and conduct of conferences and other teaching exercises requires an additional allocation of staff time.

Although the training of house staff incorporates a large component of supervised clinical service by trainees, with increasing responsibility as training progresses, it becomes quickly known to prospective house officers whether a hospital uses interns and residents for large amounts of service and provides supervision and education in insufficient amount and quality. To mold a good program is an expensive process. It requires in most instances a cadre of clinicians who devote major segments of their time to instruction, and thus impinges on time which could be devoted to practice. Hospitals which are major teaching components of academic medical centers have, of course, the faculty available for undergraduate and graduate teaching and, by virtue of this fact, internships and residencies in these hospitals are highly competitive.

The cost of graduate programs to medical schools has been largely conjectural. Traditionally most direct costs have been borne by hospitals. It has been accepted as appropriate that such expenses as house staff salaries should be allocated to patient care because of the large service component involved in house staff activities. There are those responsible for third-party payment for hospital care who believe that the educational component should be removed totally from costs to patients. Because the process of education is so intimately interwoven with that of service, cost separation is difficult and, in the minds of many, pointless. In any case, proponents of the removal of educational costs from hospital reimbursement have yet made no substantive suggestions as to how educational costs should be met. Tables 9 and 17 indicate the level of graduate medical education in hospitals in New York State with and without various kinds of relationships to medical schools. Hospitals are in serious financial difficulty, caught between rapidly rising costs of salaries and wages as well as goods and services. At the same time they are subject to

Table 17

APPROVED FIRST-YEAR RESIDENCIES OFFERED IN NEW YORK STATE BY SPECIALTY AND REGION

OPS Region	Family Practice General Practice	Internal[1] Medicine	Pediatrics[2]	Obstetrics Gynecology	Psychiatry Neurology	General Surgery	Surgical Specialties[3]	Anesthesiology Pathology and Radiology	All Others[4]	Total
Upstate	Number of Residencies[5]									
Western	12	38	18	13	15	41	15	36	14	202
Genesee-Finger Lakes	10	53	17	11	32	32	11	30	9	205
Southern Tier West	0	0	0	0	0	0	0	0	0	0
Southern Tier Central	0	0	0	0	0	0	0	0	0	0
Black River/St. Lawrence	0	0	0	0	0	0	0	0	0	0
Central	12	19	13	4	12	18	12	28	2	120
Southern Tier East	6	10	1	2	5	7	0	2	0	33
Upper Mohawk	0	0	0	0	9	0	0	0	0	9
Lake Champlain/Lake George	0	0	0	0	0	0	0	0	0	0
Upper Hudson	0	21	6	8	14	18	12	15	8	102
Mid-Hudson	3	13	3	1	33	11	0	6	1	71
Nassau-Suffolk	10	60	25	12	67	48	9	32	10	273
Upstate Subtotal	53	214	83	51	187	175	59	149	44	1,015
New York City	12	607	287	136	343	408	163	402	133	2,491
Total State	65	821	370	187	530	583	222	551	177	3,506
	Percent of Total Residencies									
Total State	2%	23%	10%	5%	15%	17%	6%	16%	5%	100%
	Percent of Registered Physicians in Indicated Specialty[6]									
Total State	18%	23%	6%	6%	14%	7%	7%	11%	7%	100%

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[1] Includes all IM subspecialties as well as undifferentiated IM.

[2] Forty-five (45) pediatric subspecialty residencies are included.

[3] Includes neurological surgery, orthopedic surgery, urology, plastic surgery and thoracic surgery, colon and rectal surgery, nephrology.

[4] Includes dermatology, opthalmology, physical medicine and rehabilitation and preventive medicine.

[5] Compiled from: American Medical Association, Directory of Approved Internships and Residencies, 1973-74.

[6] Percent of Registered Physicians in Indicated Specialty calculated from survey. Responses grouped in as close a manner as is possible to residency class.

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stringent controls and pressures to keep charges to patients down.

The Task Force recognizes the necessity for cost containment but is alarmed at the prospect of having vital graduate education programs diminished in quality or eliminated (because of the excessively high costs for redevelopment and replacement) in the interest of economy before acceptable alternatives can be developed. Because graduate medical education is so vitally linked to professional manpower the current situation is alarming.

The Task Force believes graduate medical education is one of the key areas in the determination of physician manpower availability and allocation. If major shifts are to be made in graduate medical programs in order to modify specialty distribution within an acceptable period of time, it is probable that this will have to be accomplished by a nation-wide effort toward bringing supplies of specialists into conformity with needs by adjustment in graduate training opportunities once these needs are rationally established.

In a free nation which places high value upon freedom of choice of career, it is abhorrent to place restrictions on that choice. But in medicine, where, for a variety of reasons, the law of supply and demand operates too slowly to be effective or at worst does not operate at all, the public interest must be taken into account. Supply cannot be based upon accommodating aspirants' goals alone, particularly when these often are formed with inadequate information about needs and opportunities.

Although there is much national ferment in regard to graduate medical education programs, there is not, as yet, any policy for monitoring or controlling the numbers of such programs, or training positions within them, or the specialties in which they are established. While the professional organizations have taken responsibility for monitoring program quality, no one has developed a cohesive plan for coordinating specialty mix, and this is one of the major reasons we have specialty maldistribution in all of the states. Despite rapidly increasing numbers, the distribution problem has grown worse in the last decade. We believe the Regents should consider bringing graduate medical education under the Master Plan process, in order that it may become responsive to the public need.

It must, however, be recognized that although the Regents might properly and profitably lend the weight of their office toward a re-alignment of residency programs, there are many forces involved which would have to be taken into account in such an effort. As we have said, the direct costs of graduate training programs are met by hospital charges to patients, more often than not through third party payers. The latter, then, exert considerable influence upon the nature of these programs, based upon the service needs of the hospitals' patients rather than on the long term educational refinements of society as a whole. Any major move toward the strictly educational dictation of scope and size of residency programs would have to provide alternate methods of funding which would be required if, as seems probable, third party payers felt obliged to remove their costs from allowable reimbursement formulas.

PHYSICIAN'S EXTENDERS

One of the ways to mitigate the demand for more physicians may be by the more effective and greater use of physician extenders (P.E.'s). Table 19 and Graph IV demonstrate their potential impact under a variety of assumptions. At the primary care level, P.E.'s can be expected conservatively to increase physicians' productivity by approximately 20%.[1] However, they are not currently available in adequate numbers and the rate of acceptance is slow.

Physician's Assistants

Some studies have revealed increases in the efficiency level of a physician ranging from 33% to 50% by incorporating a physician's assistant in the practice setting. It is also important to note that studies reported indicate a lower cost to the patients although the quality and amount of service is expanded. Patients experience an increase in professional contacts and a decrease in waiting time. Furthermore, such practices tend to have a higher rate of return visits with fewer broken appointments.

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[1] Some have found that a 33% to 50% efficiency level increase can be effected by the use of P.E.'s. However, we have chosen to use Reinhardt's conservative 20% for these modeling purposes. If, after extensive experience in the next decade, this proves too low, no harm will have been done, given current shortage levels. However, experience has shown that levels obtained in pilot projects frequently cannot be replicated in the full population on a sustained basis.

If the influx of foreign medical graduates in the future is curtailed by the Federal Government's immigration policies, physician's assistants may assume an extremely significant role under the supervision of licensed physicians in the non-teaching hospitals. Experience to date with physician's assistants in New York City hospitals has demonstrated their usefulness and important contributions to medical care in such settings.

The number of physician's assistants (P.A.'s) registered in New York State has climbed to nearly 400. The eight approved training programs in New York now have approximately 350 students enrolled with a combined graduating class of 150 per year. Competition for admission to these programs is equivalent to competition for admission to medical school.

The didactic portion of the P.A.'s educational program covers detailed work in both the basic and clinical sciences similar, but not comparable, to that found in the medical school curriculum. Standard liberal arts and science courses are not appropriate for the program, hence development of specialized courses is necessary.

The clinical phase of training requires much of the same basic experience with patients as is provided to upper division medical students and interns. Hence, the clinical portion of the P.A. curriculum represents a major challenge to program expansion, just as it is in medical schools. In fact, medical schools offering P.A. training find their P.A. students in competition for patient experience with the junior and senior medical students, perhaps with Fifth Pathway students and with interns and residents. Careful consideration must be given to adequacy of patient load for present teaching commitments before a medical school or hospital can consider offering a new program for educating P.A.'s or for significantly increasing the size of the existing programs. Some institutions presently are on the threshhold of saturation of "teaching patients" with the wide variety of health care students and medical personnel who must depend on such patients for their clinical experiences.

P. A. students also require physician faculty, just as do medical students, interns and residents. The clinical faculty to student ratio to a large extent is 1 to 2 or 1 to 1. Consequently, it is not surprising that the clinical education costs for the P.A. are not far below those for medical students. The chief difference, of course, is the shortened curriculum for the P.A. Table 18 summarizes the per student educational costs of a P.A. program based on data from four typical programs in New York State.

Nurse Clinicians

As the result of negotiations between representatives of the State Boards for Medicine and Nursing, and discussions with representatives of the State Departments of Health, Mental Hygiene, Corrections, the Health Planning Commission, the State University and the Governor's Office, legislation is being prepared for submission to the next legislative session which would restrict the title "nurse clinician" to those registered professional nurses who, by virtue of additional approved training, may perform certain additional functions within an established medical protocol or with physician supervision -- functions which are normally regarded as within the practice of medicine.

If enacted into law, nurse clinicians would be prepared and authorized to assume a broader role than is now legal in the delivery of primary and general medical care services.

Such persons could quickly be brought into the mainstream of primary care and could be of great assistance in ambulatory clinics, nursing homes, and other organized

Table 18

Analysis of Average Program Cost per Student in Four Physician's Assistant Programs in New York State Enrolling 240 Students During the 1973-74[1] Academic Year

Instruction Cost	Average
Faculty Salaries	$1,846
Non-Faculty Salaries	1,334
Other Direct Cost	2,404
Total Direct Cost	$5,584
Indirect Cost	1,125
Total Instruction Cost	$6,709
Patient Care Essential to Education[2]	794
Total Education Cost	$7,503
Income Offset for Patient Care[3]	236
Total Net Education Cost	$7,294

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[1] Data obtained from four programs selected for study on the basis of comparability and all had graduated students.

[2] Adjusted value from data in the New York State Medical School Cost Study for the required forty weeks of clinical experience. Medical student cost was $1,031.

[3] Adjusted value from data in New York State Medical School Cost Study for the required forty weeks of clinical experience required. Medical student figure was $306.

settings in addition to their roles in the physician's private practice or in a hospital. We recommend that graduates of approved programs be registered for the delivery of primary care in accordance with appropriate legislation.

At the present time information is not available regarding the number of training programs for nurse clinicians which will be approved and registered by the State Education Department. Because of the varied state of the programs, the Task Force does not have information adequate to provide detailed analyses relative to program costs, levels of support and potential impact, comparable to that for P.A. and medical students. For these reasons, short of urging their legal authorization, the Regents Task Force is not prepared at this time to make further recommendations regarding nurse clinicians.

Emergency Medical Technicians

New York State, along with others, has directed and provided extensive training programs for emergency medical technicians. Some other states have more comprehensive systems for providing access to and integration of emergency medical care. Such programs already are authorized under the Public Health Law for New York State, but there is inadequate funding for integrating the system to achieve maximum efficiency with appropriate communications networks between remote, underserved locations in the State and the nearest regional medical centers with ambulance service, helicopter service, etc. Efforts to achieve necessary funding levels should be supported, in order that primary care of an emergency nature may be made available to all residents of the State.

Impact of Physician Extenders on Physician Requirements

Major reductions could undoubtedly be made in physician supply requirements if, by 1990, 50,000 P.E.'s could be educated and effectively employed by primary care physicians. Since from national data we now have about 24,500 nonclerical physician extenders with various levels of training, and functioning in various capacities, we would need to increase their numbers and acceptability (public and professional) and sharpen their roles and responsibilities to levels which seem doubtful of achievement in the next two decades. One limitation on our ability to use and absorb P.E.'s effectively is related to the numbers of new office-based physicians who will become available. New physicians can be expected to be more receptive to and more likely to use P.E.'s effectively than those who have become accustomed to traditional practice.

Therefore, II-B on Table 19 and Graph 1 seems the most optimistic expression of the potential effect of P.E.'s which could be anticipated for 1990 -- and since by then, from State sources we will probably have fewer than 5,000 physician's associates, even under the most optimistic expectations, the remaining 37,000 would then have to be nurses with postgraduate special training for primary care.

At the 50,000 P.E. level FMG's could be reduced from the projected 39% level to 20% of total physicians -- or below our current level -- if all other growth characteristics in assumptions 4 and 5, Table 20 hold. To reduce dependence on FMG's otherwise, we would either have to depress demand for physicians, find a way to attract more United States graduates or substantially increase medical education resources above current projection levels.

Table 19

Potential Impact on Physician Requirements Through Use of Physician Extenders with and without Increase in Demand using N.Y.S. 1972 Physicians - (38,900) i.e. 212/100,000 as base

Assumptions regarding changes in demand - above those generated by population growth - and efficiency represented by use of PE's[1]	1990 Effective Phys./Pop[6] (100,000) Rate	Number of Phys.	1990 Rate of Phys./100,000 Population Generated	PE[3]	Diff. Between Aver. of Assump. 4&5, i.e., 52,500 Phys. Need projected under indicated Hypotheses
I. No increase in Demand	212				
A. PE at current rate 1 per office based physician		43,300[4]	212	27,400	9,200
B. PE at 2[3]		34,400	168	37,000	18,100
C. PE at 3[3]		32,200	158	48,900	20,300
II. 1% Annual Demand Increase	254				
A. PE at 1		51,900	254	32,900	600
B. PE at 2		45,300	222	52,200	7,200
C. PE at 3		38,800	190	58,800	13,700
III. 3% Annual Demand Increase[5]	382				
A. PE at 1		78,000	382	49,200	(25,300)[2]
B. PE at 2		68,000	333	78,800	(15,500)[2]
C. PE at 3		58,000	284	88,200	(5,500)[2]

[1] Excluding clerical (if clerical assistants were included from National (Reinhardt, op. cit.) then all the numbers would be 0.75 greater, i.e. 1.75, 2.75, 3.75).

[2] This is "surplus" over goal -- all other numbers in this column indicate physician "savings" or efficiencies (i.e. fewer physicians needed) that would result compared to Graph I, goals 4 and 5.

[3] In this range Reinhardt assumes each P.E. above 1 reduces demand for physicians by 20% (i.e., at 2). Since indicated numbers assume there's already an average of one P.E. associated with and available to every office based physician nationally, we'd need 80% of office based physicians needed to provide same level of services that 100% of the physicians would provide at 1. P.E./office based physician.

[4] AMA, Distribution of Physicians in the U.S., 1972. 63% of N.Y.S. physicians are office based. (61% of U.S. physicians are office based). Thus, 134/100,000 equals current rate of O.B. physicians in N.Y.S. 70/100,000 - not office based.

[5] Reinhardt says there's historical evidence for a 3% annual rate of increase in demand for physician services.

[6] 1990 Projected population - OPS.

[7] P.E. - is a convenient designation for nonphysician members of the primary care team -- who can by performing selected professional activities -- traditionally the responsibility of physicians -- increase physicians effective patient workloads. This does not include allied health professionals employed in institutions and other settings such as radiological technologists, physical therapists, respiratory therapists, and medical technologists.

[8] At the P.E. levels, on Table 16, 1990 goals could be achieved only if large numbers of nurses annually (i.e. 2,500 -- 3,500/yr.) were given minimally twelve months additional post graduate clinical nurse residencies which would then qualify them for roles that would permit the hypothetical efficiency to be achieved. Because of the probable maximum of physician's associates output in the next fifteen years, even with the expansion of extant programs and development of new ones in all feasible locations would be about 5,000 accumulated.

Thus, any number over this would have to come from alternate educational sources and the current nurse education program is that which can most readily be anticipated to provide manpower for physician extenders with an indicated addition of a 1-year minimum clinical nurse residency. Capacity of and demand on nurse manpower resources seem adequate to meet this in addition to more traditional needs.

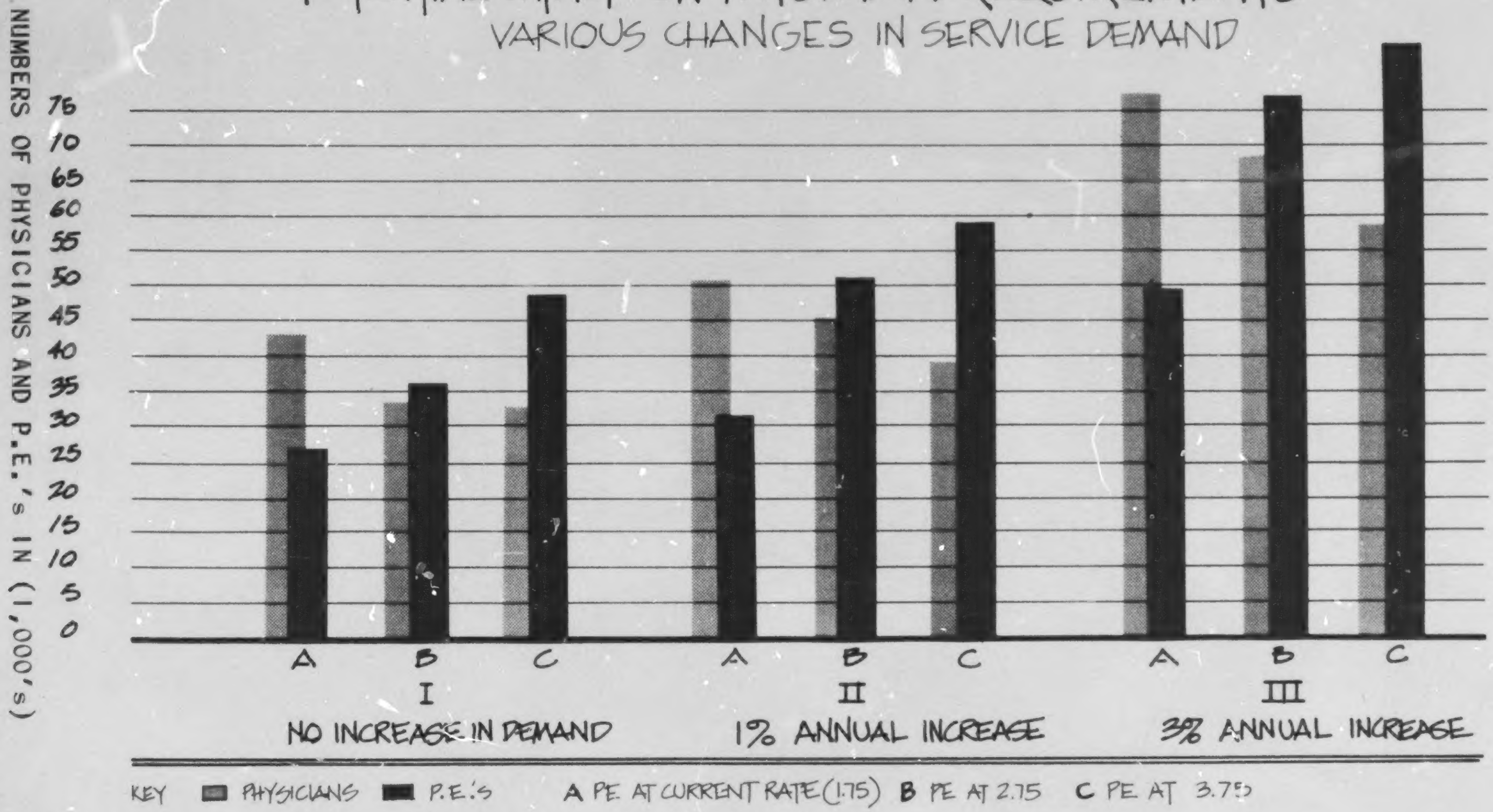
We recognize that a major proportion of the estimated 24,500 currently labeled physician extenders in this model are inadequately educated for the role they should perform to achieve maximum efficiency. In addition, clerical personnel, according to source data projections, would equal 19,000 on top of the 24,500 now thought to be performing some physician extenders professional health activities.

GRAPH I

USE OF PHYSICIAN EXTENDERS

POTENTIAL IMPACT ON PHYSICIAN REQUIREMENTS

VARIOUS CHANGES IN SERVICE DEMAND



PROJECTED SUPPLY AND REQUIREMENTS FOR PHYSICIANS IN NEW YORK THROUGH THE YEAR 2000

One of the chief charges to the Task Force was to determine the supply of, and demand for, physicians in New York State. As mentioned earlier, there are no known universally acceptable criteria to measure the adequacy of supply, nor are there any precise measures of reasonable demand.

With information and knowledge about current and projected medical school capacity in New York State and by relying heavily on the SOAR methodology (Supply, Output and Requirements Project of DHEW[1]), we have developed a number of projections of physician manpower, using as a base detailed information about registered physicians practicing in New York State from the 1972 registration survey and AMA reports.

The models and conclusions presented in this section have been developed to respond to questions concerning adequacy of medical school capacity to meet manpower needs, an area which is still largely uncharted, but we do not plan to develop regional physician staffing patterns. We do wish to make certain that the resources are capable of meeting the requirements.

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[1] U.S. Department of Health, Education and Welfare, Division of Manpower Intelligence, The Supply of Health Manpower, February, 1974, prepublication edition.

Projected Supply of Physicians from Expected Medical School Graduates and Registered Physicians

Graph II depicts physician supply projected through the year 2000, based upon eight different assumptions compared to the 1972 physician manpower situation in New York State and the projected change in the State population between 1972 and the year 2000. (Supporting tabular material is contained in Table 20.) Graph III traces the curves that would be produced by these eight assumptions through the year 2000.

Basically, we have tested three sets of hypotheses.

1. What would happen if no additional foreign medical school graduates were added after this year.
2. What would happen if new foreign medical school graduates continue to be licensed in New York State at the same rate they are currently being licensed (1,450 per year).
3. What would happen if foreign medical school graduates continue to be licensed but at a decreasing rate from 1,450 down in 1990 to 380 (which is 10% of the most recent lowest Federal estimate).

The above three assumptions, relating to the foreign

Table 20

NEW YORK STATE PHYSICIAN SUPPLY PROJECTIONS TO 2000 BASED ON EIGHT ASSUMPTIONS[1]

ASSUMPTIONS	Physician Rate per 100,000 Population for Selected Years[2]					
	1975	1980	1985	1990	1995	2000
1. Schools grow as planned. No additional places are added after 1985 but graduating class size remains at the 1985 level of 1716. No new FMG's are added after 1974, and we retain only 74% of the graduates.	205	200	195	193	191	190
2. Until 1984, graduating classes grow according to plan. After that classes grow at 1.5% annually. The State only captures 74% of its output and no new FMG's are added after 1974.	205	200	195	194	196	200
3. Medical school graduate classes increase as planned, and after 1984, total State graduating class grows at 1.5% annually. They "all" stay in N.Y.S., and no new FMG's are added after 1974.	210	213	217	222	230	241
4. Until 1984, total State graduating classes increase as planned, and after 1984, they grow at 1.5%, but N.Y.S. only keeps 74% and FMG's are added in decreasing numbers from 1450 in 1974 to 380 annually in 1990 and beyond.	227	248	256	257	258	261
5. N.Y.S. schools grow at 2.7% after 1984. N.Y.S. only manages to capture 74% of its share of the U.S. graduate pool. FMG's are added in decreasing numbers from 1450 in 1974 to 380 in 1990 annually and every year thereafter.	227	248	256	258	262	271
6. N.Y.S. schools grow at 2.7% after 1984, and they "all" stay in N.Y.S. FMG's are added in decreasing numbers from 1450 in 1974 to 380 in 1990 annually and every year thereafter.	232	261	277	287	298	315
7. Until 1984, total State graduating classes increase as planned and after 1984, they grow at 1.5%, but N.Y.S. only keeps 74% and FMG's are added at 1450 per year each year through 2000.	227	253	274	293	312	330
8. Medical school graduate classes increase as planned and after 1984, total State graduating class grows at 1.5% annually. They "all" stay in N.Y.S., and 1450 FMG's continue to be added each year.	232	267	295	321	346	371

DATA REFLECTED IN ASSUMPTIONS PROJECTIONS

Graduating Class Size
Used to Develop Various Assumptions

Graduating Class Size Increased at Indicated Percent Annually After '84	Academic Years Ending						
	1970	1975	1980	1985	1990	1995	2000
at 1.5%	1101	1592	1597	1716	1848	1989	2143
at 2.7%	1101	1592	1597	1777	2029	2318	2648

ASSUMPTIONS	ESTIMATED CUMULATIVE NUMBERS OF NEW PHYS. ADDED (Accumulated from 1974 to Indicated Year)			ESTIMATED NUMBERS OF PHYS. WHO WILL BE ACTIVE IN N.Y.S. IN INDICATED YEARS UNDER INDICATED ASSUMPTIONS			
	1980	1990	2000	1980	1990	2000	
						Number	Percent
Assumption One	6,577	18,736	31,066	38,213	39,332	40,554	5%
Assumption Two	6,577	19,017	33,431	38,213	39,596	42,593	5
Assumption Three	8,888	25,699	45,177	40,816	45,336	51,343	5
Assumption Four	14,204	33,684	51,898	47,420	52,465	55,660	37
Assumption Five	14,204	34,008	54,336	47,420	52,766	57,758	36
Assumption Six	16,515	40,804	66,940	49,961	58,565	67,210	33
Assumption Seven	15,277	42,217	71,131	48,425	59,785	70,460	56
Assumption Eight	17,588	48,899	82,877	51,028	65,526	79,212	52

[1] See Graphs I and II for graphic expression of these assumptions.

[2] In 1972, the rate was 212 physicians per 100,000 people.

Sources and Explanations:

Population: New York State Office of Planning Services, Demographic Projections. June, 1974 revision. (Low Birth Rate Series)

1.5% Growth Rate was the typical national rate during the decades of the 1950's and 1960's. During the same period, the mean New York State rate was 1.3%

2.7% Growth Rate in Graduating Classes: U.S. Department of Health, Education, and Welfare, The Supply of Health Manpower. (Prepublication edition) High Projection.

Attrition 2.29% to 2.27% annually based on The Supply of Health Manpower and age distribution of N.Y.S. physicians, as shown in 1972 survey.

74% retention of graduates based on Table 11. Summary of C. Theodore, et al., Mecical School Alumni, 1967. Chicago, American Medical Association, 1968.

Physician Base Data: Projected from numbers of physicians registered and practicing in N.Y.S. in 1972 according to registration files and survey information.

Physicians are added to supply assumptions two years after graduation.

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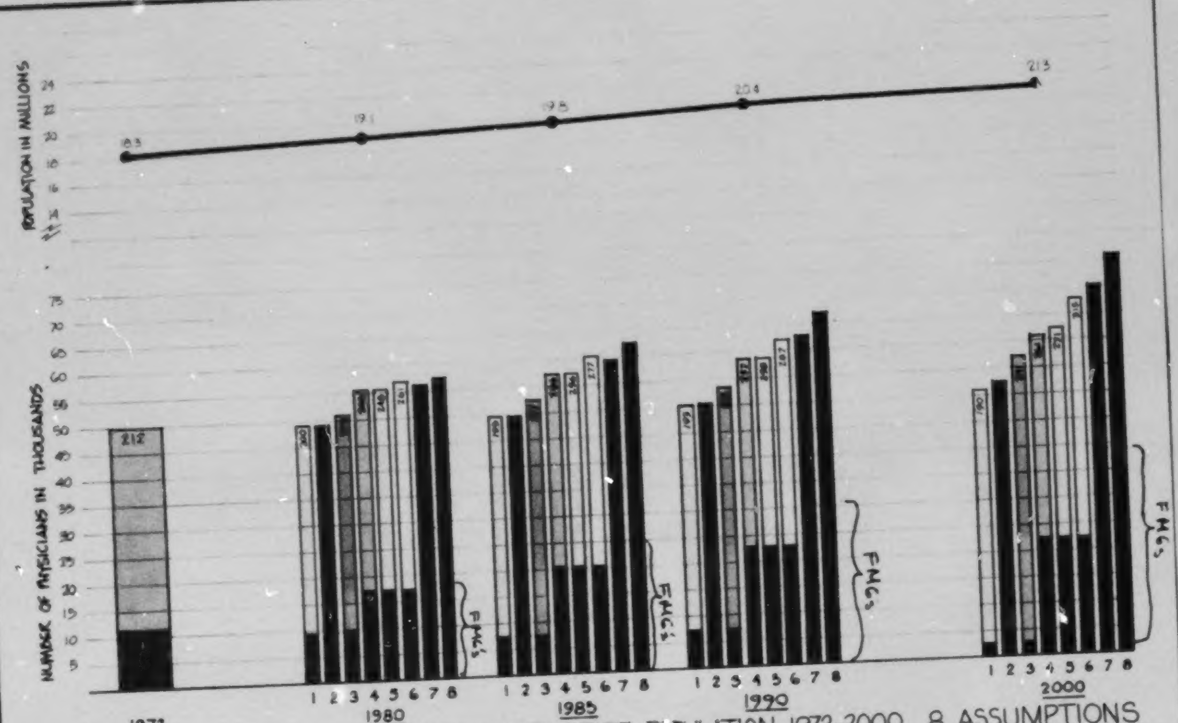
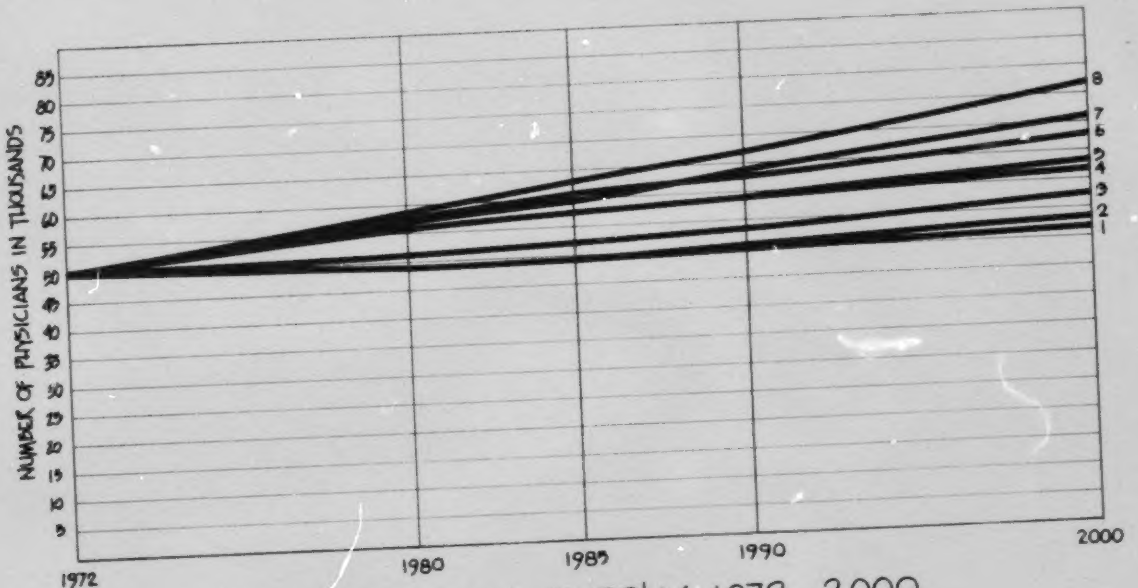
GRAPH II



N.Y.S. PHYSICIAN SUPPLY COMPARED TO STATE POPULATION 1972-2000 8 ASSUMPTIONS

KEY: ▇ FMG'S ▭ ALL PHYSICIANS NUMBERS IN BARS INDICATE TOTAL PHYSICIANS RATE PER 100,000 POPULATION

GRAPH III



NYS PHYSICIAN SUPPLY 1972 - 2000

8 ASSUMPTIONS

medical graduate, were then played against:

a. No growth

b. 1.5% annual growth

c. 2.7% annual growth in the total medical school capacity for every year after 1984.[1]

Thus, assumption I on Graph II shows what would happen if after 1974 no additional foreign medical school graduates were added to the supply of available physicians in New York State, and the medical schools did not grow beyond currently expected capacity. In fact, there would be a decrease in the rate of physicians to population from 205 in 1975 down to 190 by the year 2000 under this assumption.

The second assumption indicates what would happen if no FMG's were added to the State supply after 1974, and the medical school capacity after 1985 were to grow at 1.5% annually (a 10% plus increase between 1985 and 1990) but the State only managed to "capture" 74% (its present rate) of its fair share of output.[1] Under this assumption, the rate of physicians per 100,000 population would decline from 205 per 100,000 in 1975 down to 194 per 100,000 in 1990, and then would begin to climb again.

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[1] The 2.7% rate of medical education expansion was tested because that is the factor the Federal Government used in their high series. It approaches the rate that would be needed to begin to diminish the need for foreign medical school graduates. Also, it is the rate at which medical education expanded during the period of extensive Federal funding in the United States. The 1.5% annual rate of growth approaches the experience of all states during the 1950's and 1960's, before massive infusions of Federal money were available. (New York State in that period hovered around a 1.3% annual class size growth rate.) We expect that both Mt. Sinai and Stony Brook will reach full maturity by 1984, and we have information from all the medical schools (based upon their current enrollments and near future plans) regarding the size of their graduating classes we can expect if no changes are made in current plans.

The third assumption reveals what would happen if medical school growth proceeds as planned, and after 1984 the graduating class size grows annually at 1.5% and "all"[2] graduates stay in New York State. This also assumes that no new FMG's will be added to the system. Under this assumption, we would experience a modest increase in the rate of physicians per 100,000 population, from 210 to 241, between 1975 and the year 2000.

Assumptions 4 and 5 project annual growth in the medical school graduating class of 1.5% and 2.7%, respectively, for 1985 and after, and both assume that the State manages to capture only 74% of its output and that the FMG supply shrinks from the current 1450 down to 380 in 1990 and beyond. Under both assumptions 4 and 5 there is a continuing rise in the ratio of physicians to population between 1975 and 2000, from a low of 227 to 261 under assumption 4, and from 227 to a high of 271 under assumption 5.

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[1] See Table 16.

[2] Statistically "all" -- i.e., we would gain the same number of U.S. graduates as those which we lost from New York schools.

Assumption 6 shows what would happen if the schools grew at 2.7% annually after 1984 and all of the graduates stayed in New York State, and the FMG's decreased from 1,450 to 380.

Under Assumptions 7 and 8, the annual level of FMG increase is held at the current 1,450, and by the year 2000, under both of these assumptions, the FMG proportion of the total physician population would be 56%. The Task Force believes that both of these assumptions project unnecessarily high ratios of physicians to population, when compared with anticipated requirements; they also would produce an unacceptable ratio of FMG's to USMG's. However, they approximate New York State's share of FMG's based on recent high Federal estimates, as can be seen from a comparison with Table 21 and Graph IV.

One of the limitations of Table 20 is that in it we assume New York State will either continue to lose 26% of its "fair share" or will keep "all" physicians it educates. The future will probably be between the two. Even if New York State makes a massive effort to keep a larger proportion of its graduating classes, we recognize that one of the State's exports is professional manpower. Thus, although we may keep 85% instead of 74%, we should not now

TABLE 21

TOTAL PHYSICIANS REQUIRED BY 1990 IN N.Y.S. UNDER SEVEN ASSUMPTIONS COMPARED TO TOTAL THAT WOULD BE REQUIRED IN 1972 UNDER SAME ASSUMPTIONS.

(See Graph III for graphic expression of these assumptions)

ASSUMPTIONS	1972		1990	
	Total Numbers	Rate (per 100,000 pop.)	Total Numbers	Rate (per 100,000 pop.)
A. Current ratio is sustained	38,864[6] (actual)	212	43,300	212
B. Current ratio of all but primary patient care specialists is sustained but model primary care factors are applied.[1]	47,400	259	53,000	260
C. Primary care physicians, as defined by model are 50% of all physicians.[2]	49,400	270	55,600	272
D. Prepaid practice plan model.[3]	34,000	186	38,000	186
E. 10% of Federal projections for U.S.[4]				
1. Basic	32,400(31,200)[6]	177(170)	59,400(53,500)	291(262)
2. Low			55,700(50,100)	273(246)
3. High			63,700(57,300)	312(281)
F. 13% of Federal projections for U.S.[4]				
1. Basic	42,100(37,900)[6]	230(207)	77,200(69,500)	378(341)
2. Low			72,400(65,200)	355(320)
3. High			82,800(74,500)	406(366)
G. The region with the highest physician to population ratio N.Y.S. becomes 1990 N.Y.S. average ratio.[5]	43,900	240	49,000	240

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[1] Source: Schonfeld, et al. "Numbers of Physicians Required for Primary Medical Care, New England Journal of Medicine, 3/16/72.

[2] AMA, House of Delegates, 1972, "...50% of all medical school graduates should enter primary care specialties..." (family practice, general practice, internal medicine, pediatrics and ob./gyn.)

[3] U.S. Department, H.E.W., Health Manpower Perspectives 1967, p.75.

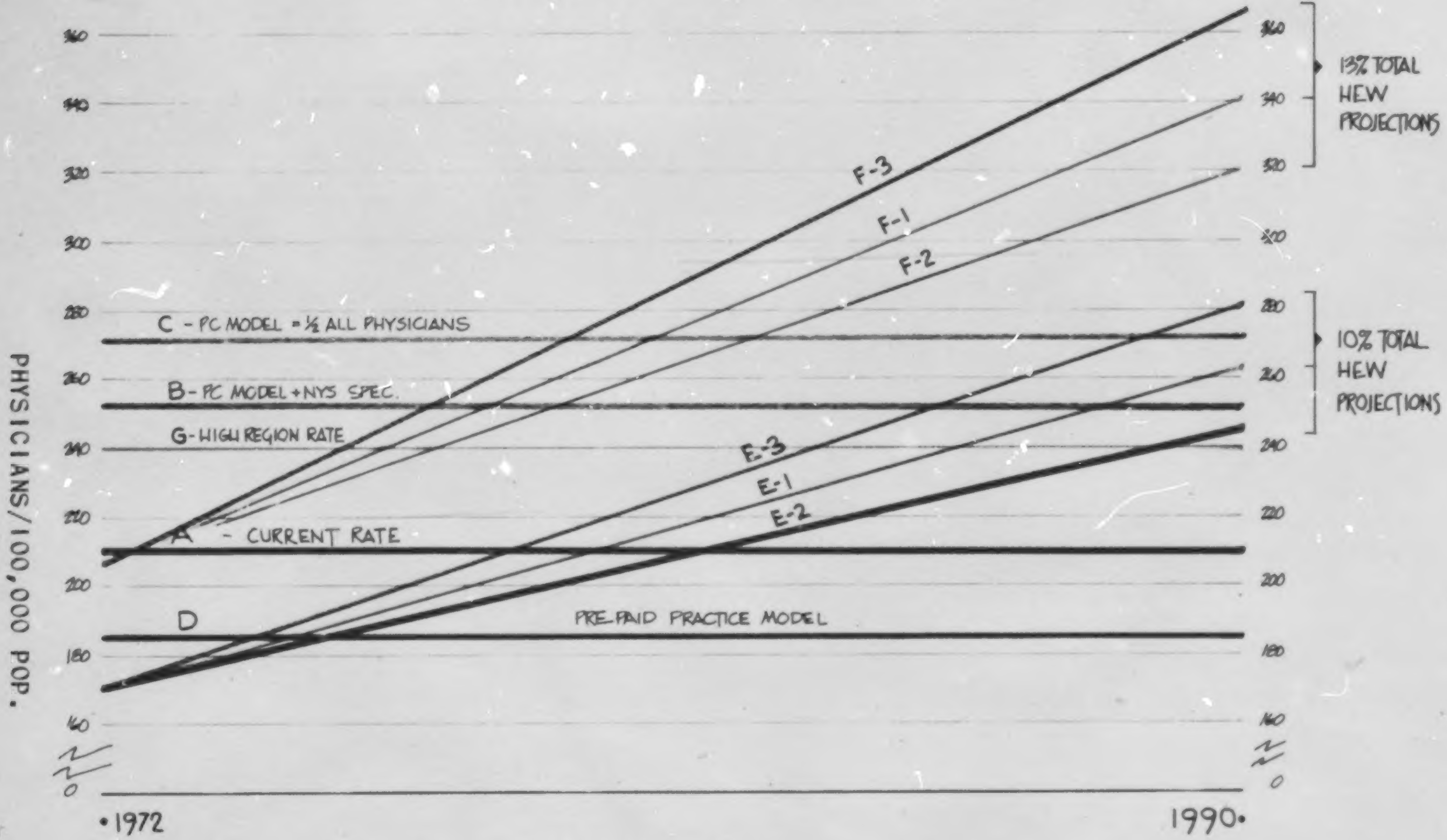
[4] U.S. Department, H.E.W., Division of Manpower Intelligence, The Supply of Health Manpower, February 1974, prepublication ed.

[5] U.E. Reinhardt, Health Manpower Forecasting: Current Methodology and its Impact on Health Manpower Policy, (unbound paper) Cambridge, Mass., May 1974, on pages 13 and 14 indicated that Yost had heretofore chosen Westchester County as the standard for projecting basic need.

[6] Numbers in A, E and F do not agree since the Federal projections are based on the AMA physician definitions which yield a substantially greater population than the registration file. This problem is described elsewhere in the report. In part, it's due to interns and residents and inactives. To make them comparable the numbers in parentheses show what 90% (which is approximately what our current registration population is of AMA count) would look like.

[7] Population source: OPS (Revised 6/74) Demographic Projections 1972 est. at 18.3 mil., 1990 est. at 20.4 mil.

GRAPH IV



NEW YORK STATE PHYSICIANS

DEMAND/REQUIREMENTS PROJECTIONS

project having 100% or 110% of New York State's collective graduating class. (The 85% is not one of the projection variables.)

Even at the most conservative State output projected -- 1.5% annual growth after 1985 in total in-State graduating class -- by 1990 we would need to have found about 130 additional medical school spaces for each annual graduating class above currently projected 1984 plans. This would require the twelve medical schools, if the 130 were distributed uniformly, each to take an additional 10 students beyond that which they currently plan to accept some time before 1985. Needless to say, growth could also be accomplished by the development of either additional clinical resources to be attached to extant schools or totally new institutions. Adding the goal deficit sooner than 1985 would mean reliance on FMG's could be phased out sooner or the goals would be achieved earlier.

Most Reasonable Supply Assumptions

The Task Force believes that assumptions 4 and 5 most closely approximate the supply that will be needed. Unfortunately, in both assumptions 4 and 5 the proportion of FMG's to the total number of physicians remains fairly high, at almost 40% throughout the projection period, as compared to our current situation. (Approximately 23% of New York State physicians now are FMG's.) It's conceivable that if some of the high Federal projections for other states come to pass, some of the places we are "reserving" for FMG's in these two models may indeed be occupied by physicians coming from other states.

We hope that some way can be found to achieve this level of physician to population ratio without such heavy dependence on the FMG component displayed under assumptions 4 and 5.

In summary, Graph II and Table 20 reflect potential growth within the structure of the twelve traditional medical schools we now have in the State. To the extent that non-traditional programs can be developed and receive approval, such as some of the proposed clinical medical school models, it might be that we could begin to depress the FMG segment and possibly even effect a more rapid growth toward the desired goal. Thus, not only would we be able to produce more physicians sooner, but with the larger numbers that were produced we could achieve two major goals: reducing our dependence on the FMG pool and increasing the potential for educating primary care physicians.

How Do Supply Projections Relate to Need

The Task Force also has examined a number of assumptions about requirements. Since there are no universally acceptable criteria of physician need, a number of models have been developed. Some have been studies by other states along with comparative ratios of physicians to population.

Primary Care Assumptions

There is substantial evidence that the major need in the State is for many more primary care physicians. A group at Yale[1] has developed a relatively conservative model with which to estimate the need for primary care physicians. It is based upon a study of the physicians' time required to manage the anticipated incidence of acute and chronic diseases and conditions by age of population, and the level of treatment required by a hypothetical population of 100,000. After examining the Yale model, (used in Table 21, Assumptions B and C) for primary care, the Task Force believes that it is effective and thoughtfully developed. The goals it expresses are desirable and achievable. Furthermore, its yield is consistent with good experience -- approximately 4.6 primary care visits per year per person, and patient demand for more United States primary care physicians, particularly in light of a potential increase of from 23% to 57% in the next quarter century. Furthermore, its yield is fairly close to the model that is currently being used, with apparent satisfaction, in the Ontario system.

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[1] New England Journal of Medicine. 286:571-576 (March 16), 1972. Schonfeld, Hymen K; Heston, Jean F.; Falk, Isidore S. Special Article, - "Numbers of Physicians Required for Primary Medical Care."

In Table 21, under Assumptions B and C, New York State primary care physicians have been grouped to fit the Yale (Schonfeld) model. Combining survey and registration data, we have an estimated 16,100 practicing primary care physicians. (This includes those in family practice, general practice, pediatrics, and all internal medicine including sub-specialties.)

According to registration and survey data, there were 38,900 registered physicians in New York State in 1972. Therefore, physicians in New York State other than practicing primary care physicians totalled 22,800, or 124 per 100,000 population. Amongst the 22,800 were administrators, researchers and others who provide no patient care at all.

Applying Yale factors to New York State population, we would have needed a total of 24,700 practicing primary care physicians, or, in other words, there was a lack of about 9,500. (The 9,500 is the sum of deficits.) One region (New York County) has 1,000 primary care patient care physicians over the Yale model. On the assumption that these 1,000 are "immovable" the sum of the shortages (i.e., 9,500) is used. (See Table 22.)

In comparing base line physician projections from survey data and from other data that the Task Force has collected, we have, for Schonfeld's models, included in primary care all internists whether or not they indicated a subspecialty. (Generally, the Task Force figures for primary care include only the internists who did not indicate a subspecialty. However, Task Force analyses generally include "ob/gyn" in primary care physicians; they are not so included here.) Thus, we are fairly conservatively calculating primary care shortages.

As further confirmation of the conservative estimate this represents, Schonfeld used a longer work year for pediatricians and internists than recent studies would support. Also, in computing the need for primary care physicians, Schonfeld does not provide for routine physicals or prenatal care.

To meet the needs of its hypothetical population the Yale group calculated that 133 primary care physicians per 100,000 population would be required. We have applied their factors to the age mix of our population, and because

Table 22

EVALUATION OF ADEQUACY OF SUPPLY OF PRIMARY CARE PHYSICIANS

OPS Regions	Est. Primary Patient Care Physicians as % of all registered physicians in region[1]	Primary Patient Care Physicians by Regions using Yale[2] Criteria				Rate all other than Primary Patient Care physicians per 100,000
		Available		Deficit		
		#	Rate/100,000	#	Rate/100,000	
Upstate						
Western	41%	908	66	- 949	69	94
Genesee Finger Lakes	41	765	70	- 673	62	101
Southern Tier West	52	149	55	- 223	83	51
Southern Tier Central	48	148	69	- 144	68	74
Black River/St. Lawrence	49	143	55	- 216	83	57
Central	38	468	61	- 544	71	99
Southern Tier East	43	316	65	- 345	71	85
Upper Mohawk	45	210	64	- 249	76	78
Lake Champlain/Lake George	51	157	75	- 129	62	74
Upper Hudson	40	646	68	- 628	67	103
Mid-Hudson	43	1,865	102	- 577	32	137
Nassau/Suffolk	46	2,174	83	-1,195	46	100
Upstate Subtotal	43	7,949	76	-5,872	56	100
New York City						
Bronx	45	921	63	-1,074	73	67
Kings	49	1,944	75	-1,579	61	78
New York	30	3,154	206	+ 998	(+65)	474
Queens	54	1,900	96	- 839	42	81
Richmond	44	241	82	- 152	52	103
New York City Subtotal	40	8,160	104	-3,644[3]	58[3]	157
Total State	41	16,109	88	-9,516[3]	57[3]	124

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[1] Estimated from survey numbers those respondents indicating they engage in patient care in family practice/general practice, internal medicine (including subspecialties) and pediatrics as a percent of all respondents in the region.

[2] Schonfeld et al., op cit.

[3] Sum of deficits without subtracting New York County's surplus, measured against populations of areas with deficits.

REB:10/4/74

of New York State population age mix, this figure becomes 135 for us. This model would require almost 50% more of the number of primary care physicians than we have in the State today. There are about 22,800 specialists of other types practicing in New York State today. If these are added to the model requirements for primary care physicians, a rate of 259 physicians per 100,000 population would have been needed in New York State in 1972, as indicated in"B", Table 21. (The 22,800 includes administrators and others who may have received their training in primary care specialties who, though active, treat no patients.)

Other Requirements Assumptions

As can be seen on Graph IV and in Table 21, a number of other assumptions of requirements have been examined including three series of Federal projections at two levels; all of these would require by 1990, ratios far in excess of those which we are currently projecting or which the Task Force believes are reasonable, as measured by assumptions 4 and 5 on Graph II.

Assumptions E and F: Proportion of Federal Projections

In their recent publication, *The Supply of Health*

Manpower,[1] the Department of Health, Education and Welfare indicates New York State has 43,000[2] active physicians, and the United States has 323,000; thus, New York had 13% of the United States active physicians. For the same year, New York State's population was 18 million, the United States population was 210 million. Thus, 9% of the United States population was in New York State. (The 10% was arbitrarily chosen as an easy alternate assumption.)

To develop our assumptions E and F, we have computed 10% and 13% of the Department of H.E.W. estimates of available physicians in the United States. Their three series were derived for the United States as follows:

(1) Basic projections: assumes a net yearly increase of 5,200 FMG's through 1990 and medical schools' capacities grow between 1.3% and 2.7% annually.

(2) High estimate: assume that the 5,200 FMG's added to the United States roster in 1971 will rise to 6,600 per year and increase at that rate for every year through 1990.

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[1] Department of H.E.W., Divison of Manpower Intelligence, The Supply of Health Manpower, February, 1974, prepublication edition, page 46, Table 10, for 1970.

[2] As indicated previously, AMA statistics and New York State Education Department statistics concerning numbers of physicians do not agree.

[3] The Supply of Health Manpower, op.cit., p. 88.

(3) The low projection assumes that FMG's will increase at an average annual rate of 3,800 per year, the prevailing rate in the period from 1963 to 1970.

The Division of Manpower Intelligence of H.E.W. rejects the utilization of 8% annual FMG rate of increase as unlikely, after examining the total FMG pool.[1] This has been the rate, however, experienced nationally in the past few years.

Assumption G: High Region Rate

The physician to population rate currently extant in the mid-Hudson region was arbitrarily assigned as the mean New York State rate for 1990;[2] This figure is the basis for assumption G in Table 21. The mid-Hudson region, including Westchester County, has the highest physician to population ratio (240 per 100,000) of any region in the State outside of New York City. Patently this is an arbitrary factor, but Reinhardt[3] notes that:

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[1] The Supply of Health Manpower, op.cit., p. 85

[2] U.E. Reinhardt, Health Manpower Forecasting: Current Methodology and Its Impact on Health Manpower Policy, (unbound paper) Cambridge, Mass., May 1974, on pages 13 and 14 indicated that Yost had heretofore chosen Westchester County as the standard for projecting basic need, on the assumption that "the most highly endowed region" can be regarded "as the culturally relevant standard for the nation as a whole."

[3] Ibid., p. 24.

> "It is well nigh impossible to offer an objective, universally agreed upon standard of the right number of physicians in a given population. There are simply no easily ascertained objective market criteria on which to hang such a standard. A survey of health manpower forecasting and the recent past suggests that current forecasting techniques are simply not up to this exacting task. Much empirical research is yet to be performed before forecasters will be able to furnish policy makers with precise point estimates sought by the latter."

Assumption D: Prepaid Practice Plans Model

Regarding Assumption D, we would be skeptical about a state's ability to develop the efficiency, for the whole of a state, that prepaid practice groups impose on perhaps five percent of a cohesive, selected population in the country. To develop this assumption, based on current conservative estimates, primary care was inflated to 80/100,000 (from 72.3). And we assumed (based on AMA statistics that office-based physicians equal 63% of the total when interns and residents are excluded) the proportion of prepaid practice physicians required is equal to the total number of office-based physicians. The remainder will provide services beyond the prepaid plans and services which the prepaid plans purchase.

Comparisons of Physician Supply and Requirements

For all assumptions on Table 21 it should be noted, even under the best circumstances, total numbers required at a given time and numbers needed to get there do not necessarily have a linear relationship. A disproportionately high segment of the primary care physician population is in the upper age bracket. Most of the regions with the greatest physician deficits also have the largest proportion of physicians in the upper age brackets. Therefore, identifying total requirements, and modeling ways in which total numbers of physicians can be produced, will not necessarily meet total needs. While the total ratios may seem adequate at the model level, we may find greater discrepancies between regions than are visible now.

Assumptions 4 and 5 come closest to meeting the projected needs by 1990 using the Yale model (as expressed in assumptions B and C, Table 21). As in assumption C, if we accept the primary care factor developed by the Yale group, and also an AMA House of Delegates resolution that 50% of all medical school graduates should enter primary care specialties, then the range per 100,000 would be raised to about the 272 level[1] (close to 10% above the supply levels of assumptions

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[1] The Task Force does not have as much data about need for specialists by level or type. If primary care supply meets the hoped for goals, we will still be subject to availability and preference for referred-to specialists. Professional specialist groups are about to decide their respective and collective optimal workloads and capacities. Thus, holding specialists, for projection purposes, to current levels is probably the most supportable and most prudent statistical projection decision at this point.

4 and 5). If residencies settle at the 7,500 level and half are reserved for primary care, with 1,250 in first year primary care residencies, then in ten years we would produce 12,500 primary care physicians. (There are currently about 1,150 first year primary care residencies.) This would still be [illegible] the number needed for replacement (about 6,000)[1] and improvement (9,500), i.e., 15,500 in the next ten years. Thus, only by 1990 would we be able to close the primary care gap, if the residency pattern is as above, and if New York State could continue to attract large numbers of medical school graduates outside the State into new programs and keep the practitioners so trained. (See Table 17 for current comparions of residencies and registered physicians.)

Specialty Distribution

There are many people grappling with the development of appropriate specialty ratios, and there is neither agreement nor comfort with most of the factors that have been developed; nor is there enough information available to persuade the Task Force to identify and/or suggest eliminating any of the existing graduate educational resources (residency programs) in the State. Thus, further refinements of requirements for other than primary care specialists will have to await criteria development by professional groups and the Federal government. While the Task Force can identify needs for additional manpower, our assumptions are predicated upon the fact that change, such as greater proportions of primary care specialists, can only be accomplished by additions to the system or by substantially increasing the number of students entering primary care residency programs. It is clear from the almost universal expression of dissatisfaction from both the public and the profession that current ratios of production of specialists cannot and should not be replicated (Table 17). The specialty boards and organizations have a professional obligation to study these problems and to make recommendations concerning appropriate adjustments in training programs.

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[1] During the next ten years, more than 6,000 New York State primary care physicians probably will die or retire.

Limitations in Our Ability to Achieve Supply Goals

In supply estimates, the enrollment projections have been inflated with full knowledge of the fact that many of the schools in New York State have indicated that already they have reached or exceeded the capacity of their current physical facilities and faculties. Projections do not indicate that each of the schools will or can grow by 1.5% annually, or that there will be an even growth rate. If we accept the 1.5% or 2.7% inflation factors, the total class size of the twelve medical schools in the State would have to be increased by between 130 and 240 students beyond current plans or the equivalent of one or two new medical schools between 1985 and 1990. Under the 1.5% increase assumption by 1990, New York State will then be granting about 12% of the total United States M.D.'s; this is not far from the percent supplied by New York State currently and during the past few decades.

By the year 2000, at an annual inflation rate after 1985 of 2.7%, the total annual graduating class in New York State would be at the 2,500 level. This approaches the theoretical maximum capacity of the State's clinical resources which is also one of the limitations in our ability to expand medical education in New York State. There are approximately 83,500 hospital beds in New York State (excluding those in State mental hygiene institutions and other like special or chronic care facilities). Therefore, the theoretical maximum medical school enrollment in New York State could be at the 14,000 level if all of the 83,500 beds were in acceptable institutions and the ratio of six teaching beds per student, (the current educational criterion) was retained. However, close to 21,000 beds are in small hospitals (those under 200 beds), so the maximum total class size for all medical schools in New York State is closer to 2,600. At that point, the graduate medical education system would be totally saturated. In order to get to that point, most of those hospitals would have to upgrade and increase their staffs very substantially. This would involve expensive and difficult recruitment, and it is unlikely that all of the hospitals, even of this size, could be convinced to participate in programs involving the education of medical students. Program considerations, distance, and critical masses of students and faculty might also tend to reduce the model efficiency. Therefore, the class size of 2,100 that would be produced by almost doubling the 1970 graduating class size is perilously close to the State system's maximum capacity to provide adequate clinical experience.

An additional constraint on the system is the number of available graduate positions. Currently, 8,700 approved residencies[1] are offered in New York State. However, it is expected that this number will decline soon to around 7,500. With virtually universal graduate medical education of an average three year duration, at the 7,500 level, the theoretical maximum class size that could be accommodated in graduate training posts in New York State is 2,500. Again, this is not far above 1990 projections on Table 20 and Graph 11.

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[1] With internships, there are more than 11,000 approved graduate positions in the State.

Most Reasonable Assumptions

Assumptions 4 and 5 on Table 20 are most likely and most consistent with Assumptions B and C on Table 21 and II-B on Table 19. Therefore, the Task Force believes that 260 physicians per 100,000 populations rate is both a desirable and achievable goal for New York State by 1990. Compared to our current situation, this represents a 23% increase in rate and a 36% increase in numbers of physicians, and accommodates an annual increase of 1% in demand for service, above that which would be generated by meeting needs of the projected increased State population. With major increments in numbers of physician extenders used, and with an upgrading in their capability and acceptability, reliance on FMG's could be reduced substantially and still provide this effective physician service level.[1]

The Task Force, mindful of much activity at national and international levels in both professional and political arenas, feels that the most prudent plan, within available professional and fiscal resources would involve a rapid increase in total New York medical school class size capacity to the 2,000 level. That is about 550 over our June 1974 graduating class size. This is an ultimate goal.

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[1] As indicated earlier, the increment from 212 to 260 accommodates increases in primary care only, in our models. The Task Force is not recommending changes in the rates of other than primary care specialists providing patient care.

A few have argued that there is no need for an increase in physician output. We respectfully ask those who disagree with the magnitude of our projections to submit documentable alternatives. There is nothing sacred about the projected figures; it is necessary to have a goal and that goal can be expressed only in quantitative terms. The figure of 260 physicians per 100,000 population by 1990 is a goal rather than absolute requirement. Perhaps the figure could just as readily have been 250 or 240 per 100,000. Agreement as to goal figures becomes critical when they are within the last 10% of attainment; New York is not yet at that point.

Admittedly, the assumptions and calculations from which the projections were derived are not based on any universally accepted ratio of physicians to population. There seems to be no generally accepted information on this point. The Task Force, however, did take into consideration all of the statistical projections of health manpower and population shifts available to us, and we also based our assumptions on the best known studies in this field. In terms of presently available ratios of physician to population, our projections do seem high; however, we took into account, in as quantitative a way as possible, the potential influences of changing practice patterns, changing technologies, Federal disincentives, and the increasing trend toward group and/or salary practice. The latter means a probable 1/3 drop from 60 to 40 hours per week, in order to sustain current contact hour levels between physicians and patients in a 40 hour week, as opposed to the present 60 hour physicians' average work week. Although this might result in some off-setting increase in productivity, a predictable effect on available manpower obviously would be a needed compensatory increase in the number of physicians per population in order to sustain current levels of patient care. The 260 per 100,000 population is substantially below that necessary increase. Furthermore, the projected increase in physician output is designed to replace progressively the likely dwindling supply of foreign medical graduates which will be admitted to this country in future years.

In addition, problems with medical malpractice insurance, trends in the general community toward early retirement, the availability of pensions to those who are in salaried positions, and other factors will act to depress the working longevity of physicians. Physicians, like others in the community, will retire earlier. In spite of increases in average age, the numbers of useful professional years per year of training for medical manpower will shrink as for other professional manpower. The impact of Federal and State taxes and the excessively high cost of medical malpractice insurance are now definite deterrents to continuing part-time practice by physicians who might otherwise retire on a reduced work load. All of these factors, and others which are discussed in this report, led us to the projected goals which are stated herein.

Uncertainty regarding the effect of developments in health manpower supply and requirements, the uncertainty about the onset and impact of National Health Insurance, and the unknown future immigration policies for physicians, cause us to believe that the methods for reaching toward the goal projected for 1990 must be as flexible as possible, in order that the output of physicians may be accelerated or decelerated as necessity and prudence demand in the next fifteen years. For these reasons the Task Force does not recommend the creation of additional medical schools _de novo_ with the attendant cost in hundreds of millions of dollars each and fifteen year delays before they could be fully productive. Our recommendations, therefore, are designed to provide the necessary flexibility toward reaching the goal by 1990, however it may shift.

If most, if not all, of the major recommendations in the Regents Task Force Report are adopted, the goal of 260 physicians per 100,000 population might be reduced significantly. We have been informed by medical school deans of an increased interest on the part of medical students for careers in primary care, and an increased interest in practicing in underserved areas. If this is indeed a trend, and if physician extenders are produced in proper ratio and appropriately employed, New York State's health care needs may be satisfied with considerably fewer physicians than in the projected goal. Although the State of New York is not yet at that point, there is no question but that there will be considerable change in public expectation levels, State and Federal legislative actions, etc., long before the projected goal can be achieved. Our recommendations, therefore, allow for desirable modifications of the goal as time and policy changes indicate.

ALTERNATIVE WAYS TO INCREASE MEDICAL SCHOOL ENROLLMENT

In their 1972 Master Plan, the Regents asked that medical school enrollment "be doubled as expeditiously as possible." During the decade beginning in 1975-76, it is estimated that the average number of graduates that will be produced by medical schools in New York State will represent a nearly sixty percent increase over the average number of graduates produced during the decade ending in 1972, which immediately preceded the doubling statement. The decade beginning 1975 was chosen for comparison because this would be the first time any recommendations made by the Task Force could begin to be implemented. This nearly sixty percent increase will result from plans that are already underway. We have, as indicated, examined a number of supply and requirements assumptions. Our analysis points to the need for a total state class size goal of 2,030 by the year 1990 or sooner. That is almost double the 1970 statewide total graduating class size.

In order to achieve the 1990 goal, an average annual addition of 575 graduates will be required over the 1974 graduating class size of 1,456. (That is equivalent to the output of five mature traditional medical schools.) If existing schools continue to develop in accordance with their current plans, by 1985, the total State medical school graduating class size will be 1,720. There would still be a close to 300 graduating place gap to achieve the 1990 goal class size of 2,030. By what mechanisms could the goal be achieved? There are several alternatives, some desirable, others not. For example:

(1) We could build five additional medical schools at a current cost of about $200 million each and wait eight years before the first graduates emerged, and a minimum of four, and possibly seven, additional years until the schools reached full productivity. That possibility is both impractical and improbable since most of our manpower problems are critical now and, as was indicated earlier, at the present rate of financing, the eight independent medical schools which produce more than two-thirds of our State's physicians would be bankrupt by 1985; three are in tenuous financial situations at this time. The investment of more than $1 billion and a delay of 12-15 years in order to achieve full productivity of such new institutions is obviously a completely unacceptable solution. Such an outlay of State or philanthropic monies could not help but impinge upon the support of the twelve existing medical schools, and would jeopardize their continuation at the expense of creating new institutions,

(2) or, if each of the twelve medical schools expanded its upper division by ten students (on the average) in each of the clinical years above that currently planned in order to accommodate United States students who are currently enrolled in foreign medical schools in COTRANS and Fifth Pathway programs, we could add 120 students to the graduate pool and reduce the long range goal deficit from 310 to 190. This alternative would certainly solve some of the problems of those students who have gone overseas for their medical education. We would increase the quality of the education of those students who are certain to come back and practice medicine in the United States and encourage them to settle in New York State,

(3) or, with adequate fiscal support, the medical schools could be asked to "adopt" some of the larger community hospitals in underserved areas. Such additional clinical resources could be upgraded to the level for teaching institutions and could be used to accommodate larger classes in the clinical years as well as to upgrade the quality of care available in these communities. If only six schools adopted hospitals which accommodated 20 additional students in each of their two clinical classes, then an additional 120 students could be added to the graduate pool above those currently planned.

This also would reduce the goal deficit from 310 to 190. Obviously, if more than six schools participated, or more students could be accommodated in such additional affiliated hospitals, then the deficit would be further diminished and more United States students might be educated in an environment that is more likely to produce primary care practitioners than other specialists. Many of them, thus, receiving their training in underserved areas, might be induced to settle in these locations.

(4) In addition, we have knowledge of 20 proposals for a variety of new medical schools in New York State. Some of these proposals seem meritorius and viable; some are well intentioned but impractical; others are unreasonable and impossible. At least three of the new proposals would develop clinical medical schools similar to the British model, that is, offering only the instruction found in the clinical years in a traditional American medical school. Such programs most likely would be successful in existing institutions of high quality, with a history of excellence in graduate medical education and the capacity for providing full clinical instruction in all of the major fields.

The current guidelines of the Liaison Committee on Medical Education, the accrediting agency for medical schools representing the American Medical Association Council on Medical Education and the Association of American Medical Colleges, do not permit the accreditation of two year clinical medical schools. It is our hope that this committee and their sponsoring organizations will be willing, at least on an experimental basis and for a limited time, to modify their policies. Just as medical schools must become more responsive to the public needs, _ipso facto_ their accrediting bodies also must adjust policies which can match the reasonable needs of the public.

PROGRESS TOWARD EXPANSION OF MEDICAL SCHOOL ENROLLMENT

In addition to the massive expansion of undergraduate medical education which has been accomplished in New York State during the past few years, a number of developments have taken place since the publication of our Interim Report which encourage us to believe that our physician supply goals can and will be attained within an acceptable period of time. These are summarized in Table 23 and include the expansion of COTRANS and Fifth Pathway programs discussed earlier in this report, the contractual arrangement between the State University of New York and the University of Vermont, the planned development of a clinical medicine education campus at SUNY Binghamton, and the biomedical educational program of The City University of New York. These last programs will be discussed briefly in the following pages.

Contract with the University of Vermont Medical School

For several years the University of Vermont has not had adequate qualified applicants from its own state to fill its available spaces in its medical class. Consequently, Vermont has contracted with neighboring states to make those places available to others from out of state.

Table 23

Projected Medical Student Enrollment Increases to Meet the 1990 Goal

1970 1st yr. enrollment (Base)	1,275	
1975 1st yr. enrollment	1,596	
5th Pathway		84
COTRANS/class		40
University of Vermont		20
SUNY Binghamton		30
by 1985, if expansion continues on schedule (e.g., Mt. Sinai to 100 (from 80 in '75) and Stony Brook to 100 (from 48 in '75) 1st yr. enrollment will be		1,720
		1,894
Goal deficit by 1985	(136)	
Proposed COTRANS expansion of 20 students/class in each of 4 teaching community hospitals		80
Remaining deficit could be filled either by more 5th Pathway students, or by more COTRANS students, or by CCNY Biomed students, if program is approved by the Regents		56
1990 Goal		2,030

Furthermore, the University of Vermont finds it desirable to expand its facilities for clinical training and particularly for the education of interns and residents. Through efforts of the State University of New York, the University of Vermont agreed to development of a possible contract with the University and the State of New York which would provide at least ten but not more than 20 places in each class for residents of New York State who have been certified as eligible by the Commissioner of Education. Applicants admitted under this contract shall be eligible for all financial assistance in the same manner as if they were attending a medical school in New York State. The Commissioner of Education shall pay the University of Vermont the cost of instruction, less tuition and Federal per capita aid, for each eligible student in attendance pursuant to the contract. The University of Vermont shall charge the student only the tuition and fees required of non-resident students.

The University of Vermont Medical School has implemented a resident training program in several medical specialties at the Champlain Valley Physician Hospital Center in Plattsburgh, N.Y. and plans to assist that hospital to become a teaching hospital in cooperation with the University of Vermont Medical School. The State University of New York also is authorized to enter into cooperative efforts with the

University of Vermont to develop the education programs of the State University College at Plattsburgh in the allied health professions.

New York State residents, certified by the Commissioner of Education as eligible for admission to the University of Vermont Medical School under this contract, must sign a written agreement with the Commissioner whereby the applicant agrees to practice medicine for at least three years following the completion of training in an area of New York State designated as medically underserved. The agreement shall provide that if the applicant, upon licensure as a physician, fails to practice medicine for three years in such a designated area of New York State, the applicant shall be liable to reimburse the Commissioner of Education the amount paid by the Commissioner to the University of Vermont in support of the individual's education.

The provisions of this section became Chapter 576 of the Laws of 1975 on the first of August, 1975, and this act will take effect with the first year class to be admitted for the 1976-77 academic year.

CCNY Biomedical Education Program

The biomedical education program offered by the City College of The City University of New York is probably the most interesting and innovative experimental program in medical education today in this country. It has already aroused nationwide visibility and interest. The program is designed to take students from medically underserved districts of the New York Metropolitan area who have qualified for admission by a very careful and precise operation based on academic and non-academic criteria, including high school average and placement scores on mathematics and reading tests, motivation, and some experience in working with people, particularly in health-oriented situations. Once accepted, the students sign a memorandum of understanding which pledges them to practice after graduation from medical school and completion of residency training in primary medical care in an area underserved by physicians for two years.

The program supplements the City College liberal arts faculty which offer the traditional courses in the humanities and social sciences for a liberal arts biology major, with "borrowed" members of medical faculties in other medical schools in Manhattan. These "borrowed" faculty offer the usual medical and pre-clinical courses found in their own institutions. Students in the biomedical program will have received all of the medical school courses which a student in a traditional medical curriculum takes.

In addition, students of this program will have courses in biostatistics, sociology, economics, health law, medical history, and cultural history which the regular medical students do not receive. The premedical courses are integrated and correlated into a two year sequence in chemistry, which reduces by one year the usual time expended by pre-medical students. The biomedical students have significantly less instruction than the regular pre-medical students in traditional courses in biology, zoology, etc. Replacing those subjects, the students study courses in human anatomy, human physiology, human biochemistry, and human genetics which are preliminary to the clinical courses offered in the medical curriculum. At the end of the second year at City College, the students take National Board examinations in anatomy and biochemistry, which they must pass in order to be considered by a medical school for admission. Also for admission to one of the seven cooperating medical schools (State University of New York at Stony Brook, Mt. Sinai School of Medicine, New York University School of Medicine, University of Rochester School of Medicine, Meharry Medical College, Howard University College of Medicine, and the University of Puerto Rico School of Medicine) the students must have a B or better in every medical school subject and must have met all the academic requirements of City College in other subjects which qualify them for a Bachelor of Science degree.

The choice of the medical student and the school which accepts the student at the advanced level is the result of a matching plan in which both the school and the student express their choices in preferential order. Places have been reserved for the graduates of this program in the seven cooperating, accredited medical schools. Although the students are accepted by one of these medical schools at the end of the second year at City College, they do not physically move to the medical school until the end of the fourth year, at which time they must pass Part I of the National Board examinations. Students then enter the medical school at the usual third year level and complete clinical training in that location. They graduate with both a Bachelor of Science and Doctor of Medicine degree after fulfilling all of the necessary requirements.

The entering class is composed of 62 students; all 35 students who are still on schedule have been accepted by one of the cooperating medical schools; others have elected a slower pace or have withdrawn. The first class of 62 students was admitted in September 1973, a second class of 63 students in September 1974, and a third class of 84 students was admitted in September 1975.

This program is not a two year basic sciences medical school in accordance with the definition of the Liaison Committee on Medical Education. For that reason it cannot be accredited officially by the Liaison Committee on Medical Education, on behalf of the Council on Medical Education of the American Medical Association, and the Association of American Medical Colleges. However, two site visits have been conducted by the Liaison Committee's representatives and by representatives of the staff of the AMA and AAMC. These site visits were conducted in May of 1973 and 1974. The visiting teams were favorably impressed with the program and its quality, and had no objection to the selection of medical students from this program by accredited medical schools. In this way, a form of informal recognition is accorded by these organizations. Also, in May of 1974 a site visit was conducted by a committee of the New York State Board for Medicine composed of three physicians, all with wide experience in medical education and in the evaluation of medical schools. This site visit team was very favorably impressed with the program, the quality of its faculty, administrative staff, and its curriculum. This site visit team agreed that the biomedical science program at City College should be registered by the State Education Department for a period of five years as an experimental program in medical education, not as a school of medicine, and that full evaluation of the program and its graduates be made along with the Liaison Committee on Medical Education before registration without term is granted. That recommendation was incorporated in materials presented to the Board of Regents for approval in June of 1975.

Because this is a quality program, is innovative and imaginative in its approach to medical education, and fulfills other recommendations of the Regents Task Force Interim Report, such as increasing the output of M.D.'s, increasing the delivery of primary care, and helping to correct the geographic maldistribution of M.D.'s in urban underserved areas, the Regents Task Force recommends approval of this program and its provisional registration for a period of five years prior to registration without term. At the conclusion of the provisional period a thorough evaluation by the Liaison Committee on Medical Education should be performed.

Although this program might be considered as a prototype for a different approach to medical education, that is, dispersing preclinical medical education into universities and colleges which can provide the necessary supplementary faculty and facilities required for the first two years of the usual medical curriculum, the

Task Force does not at this time wish to see this program replicated before the five year evaluation period has been concluded. There is much to be learned about the effectiveness of such programs as well as about the problems of cooperation with other medical schools before it would be desirable to extend this kind of experimentation on a broader scale. Although the idea is attractive, the Task Force strongly urges against further experimentation on this model until after thorough evaluation and assessment.

Proposed Clinical Medical Education at Binghamton

The evidence brought out by the Task Force makes clear that of the Upstate underserved areas, only three without medical schools (Binghamton, Utica, and mid-Hudson) are sufficiently urban to make feasible establishment of major medical educational programs.

In New York State the current physician to population ratio is 212. In the Southern Tier East it is 150. In the mid-Hudson area, the proportion of physicians is higher. The Binghamton area (like Utica-Rome) has a combination of a relatively low number of physicians, a relatively large urban setting, and a relatively large number of hospital beds which might be available for teaching purposes. Of the two, the area centered in Binghamton has a larger population and more clinical resources.

Furthermore, the major need is clearly for primary care physicians, not for additional experts in most other areas of specialization. For primary care physicians, the Southern Tier East deficit of 71 per 100,000 compares unfavorably with the upstate deficit of 56 per 100,000. There is a great need for primary care physicians in the rural areas immediately surrounding the Binghamton urban area. Tioga, Chenango, and Delaware counties rank among the lowest in the state in terms of per capita numbers of physicians.

Although the place of practice for newly licensed M.D.'s may be influenced by the location of the two clinical years, the place of practice also is influenced by the area where the young physician gets internship and residency experience. Planning for this proposal would also include planning for the establishment of primary care residencies, so that physicians graduating from the clinical campus would have the opportunity to obtain in-patient and out-patient residency training in the Binghamton area.

The 1975-76 State appropriation for the State University of New York included planning monies for the SUNY campus at Binghamton, with some allocations also available for the Upstate Medical Center.

The Binghamton campus, in conjunction with the

Upstate Medical Center, is presently developing a five-year plan. The first year will be spent almost entirely in planning. Allied health programs will begin in 1976-77; clinical medicine programs will begin in 1978-79.

In this proposal, the clinical years of instruction would take place in community hospitals and such other community clinical facilities as may be appropriate, and at the State University of New York, Binghamton. Students in the clinical program would have completed their first two years at the Upstate Medical Center, Syracuse or at a similar institution.

The educational program would be studied during the planning year and developed during the next two years. However, it is unlikely that the clinical years would differ markedly from those in approved programs elsewhere, with clerkships of substantial length in basic areas such as medicine, surgery, pediatrics, and obstetrics/gynecology. Clerkships of varying length would be spent in other areas with emphasis on those relating best to the training of primary care physicians. The expected number of students would be 20 to 30 per class.

It is assumed (although assumptions here are subject to scrutiny and revision by the planning group) that there would be a small core of full time teaching staff along with a large adjunct staff composed of practicing physicians in the area. The full time staff, along with the supervision of instruction and teaching, also presumably would perform some research in conjunction with faculty at SUNY/Upstate, Syracuse.

The State University of New York and SUNY at Binghamton have been studying its potential role in health sciences education for several years.

Very strong support exists in the community at large, in the Broome County Medical Society, in the local and nearby hospitals, including the Robert Parker Hospital in Sayre, Pennsylvania, and in the Health Education Cooperative of the New York-Pennsylvania area, consisting of 79 health organizations in the five counties.

Proposed New York College of Osteopathic Medicine

The New York Institute of Technology (NYIT) located at Old Westbury, Long Island, has submitted to the Regents a petition for an amendment to its charter in order to extend its educational program offerings to include the professional degree Doctor of Osteopathy (D.O.) via the establishment of the New York College of Osteopathic Medicine (NYCOM).

The Regents Task Force has identified not only the need for more physicians, but also the need for more physicians devoted to primary care and particularly to the field of family medicine. The Department of Health, Education and

Welfare recently estimated that the proportion of medical physicians in general practice will decrease from 25.5% in 1973 to 8.4% in 1985. To the contrary, osteopathic physicians practice family medicine in small communities as well as urban centers. Family medicine has been the overwhelming characteristic of osteopathic medical practice nationally and in New York State. Nationally, in 1972, 70% of all osteopathic physicians were in family practice and 30% in limited practice; in 1971, 96% of practicing osteopathic physicians in New York State were in general practice. Twenty-eight percent of osteopathic physicians in New York State practice in communities with populations less than 10,000; 44% practice in communities with less than 25,000 population; 55% practice in communities of 100,000 or less. These data indicate that a relatively small group of osteopathic physicians are now providing primary health care to a large number of families, but in smaller communities of New York State.

Osteopathic medicine is a comprehensive school of medicine including the medical, surgical, the behavioral and manipulative sciences. The osteopathic physician (D.O.) is licensed to practice medicine in each of the 50 states and to serve as a physician in Federal and State programs such as the Public Health Service, the Armed Forces, the Veterans

Administration, Medicare and Medicaid. As practiced by osteopathic physicians, osteopathic medicine includes the biomedical principles of medicine as practiced by Doctors of Medicine. However, osteopathic medicine gives special attention to the appropriate role of the body's neuro-muscular and musculo-skeletal systems in health and disease. Osteopathic principles and techniques of physical and laboratory diagnosis and treatment, such as manipulative therapy, are part of the comprehensive clinical armamentarium of all osteopathic physicians. Thus, osteopathic medicine is not a "specialty" but rather a broad and comprehensive approach to medical care and preventive medicine.

In 1975 there are nine colleges of osteopathic medicine in the United States (Illinois, Iowa, West Virginia, Kansas, Missouri, Michigan, Oklahoma, Pennsylvania, Texas) with two additional colleges (Maine and New Jersey) in the final stages of development. Admissions requirements are similar to those of schools of medicine; 97% of the students hold a bachelor's degree from a recognized and accredited college. The Doctor of Osteopathy degree requires four years of academic graduate education; the basic science components and the clinical educational components in the curricula of osteopathic colleges are very similar to those in most American and Canadian medical schools. However, unlike medical schools, the role of structural factors (the neuromuscular and musculo-skeletal systems) in health and disease is an integral part of each segment of the curriculum, as is emphasis on the principles and techniques of family practice and preventive medicine.

In addition to internships of the "rotating" variety, several osteopathic colleges and hospitals are incorporating preceptorship training as part of their clinical educational experience in order to capitalize on the family practice skills in the community. Specialty residencies and other postdoctoral training opportunities are offered to osteopathic physicians by osteopathic colleges, osteopathic and medical hospitals, and by specialty groups.

The American Osteopathic Association now has a mandatory requirement of a minimum of 150 hours of continuing medical education in each three years in order to maintain membership privileges.

The primary objective of the New York College of Osteopathic Medicine (NYCOM) is the preparation of osteopathic physicians (D.O.) for careers as family physicians in New York State. Emphasis will be given to the needs of opportunities in primary health care and community medicine with focused attention to the health care problems of the inner city and smaller communities of the state. The NYCOM also will concern itself with the continuing education of physicians, the training of osteopathic teacher-clinicians and the furtherance of knowledge about the role of the neuro-muscular and musculoskeletal systems in health and disease. It is proposed that the NYCOM will provide a total educational environment geared to the preparation of family physicians, as differentiated from the present educational model of family practice being one of several specialty departments in colleges of medicine. However, there seems to be no guarantee that graduates of NYCOM, educated for family practice though they be, will not succumb to the same temptations and pressures for concentration in other specialty areas as do the recently graduated Doctors of Medicine.

The educational goals of the New York College of Osteopathic Medicine require the establishment of a continuum of education encompassing the biomedical health sciences, the clinical sciences and postdoctoral study and review. The proposed NYCOM will realize these goals by offering the biomedical health sciences on the New York Institute of Technology campus of NYCOM; the clinical sciences at the NYCOM campus and the three affiliated osteopathic hospitals (LeRoy in Manhattan, Interboro in Brooklyn, and Massapequa in Seaford, Long Island) and preceptorship-extern experience in affiliated physician offices; postdoctoral study will be offered through the NYCOM affiliate, the Postgraduate Institute of Osteopathic Medicine and Surgery in Manhattan. The New York Institute of Technology campus in Old Westbury, Long Island, is located at the approximate geographic center of the affiliated osteopathic hospitals, thus allowing for convenient rotation of students during their clinical training.

Classroom, laboratory, library and combined clinical facilities of the hospital consortium (570 beds, 30 bassinets, and outpatient facilities) will provide for education and training of an eventual class of 108 students by 1980-81. It is expected that the first class will be composed of 36 students, which would enter in the 1976-77 academic year.

The plans for institutional organization, faculty governance, admissions policies, curriculum, expansion and rehabilitation of physical facilities, and the projected budgets seem reasonable and attainable.

At this time pre-accreditation evaluation visits have not been made by consultants to the State Department of Education. Provided such an evaluation report is affirmative in its findings, the Task Force believes that New York State residents should have the opportunity to choose to attend either a medical school or a school of osteopathic medicine in this state.

Proposed Medical School in Queens

Perenially the state legislature has seen a bill advocating a medical school in the county of Queens. The 1975 legislative session and the Governor have approved the formation of a temporary state commission "to formulate a plan for the establishment of a public medical college in the county of Queens."

In view of the fact that at this time no viable proposal for a medical school in Queens has been submitted for review by the Regents Task Force, we refrain from expressing an opinion on this possibility.

RECRUITMENT OF PHYSICIANS TO UNDERSERVED AREAS

The Role of Approved Internship and Residency Training Programs

In 1960 Weiskotten[1] and his colleagues published a study of the relationship of the state in which medical education was obtained, and the state in which graduate medical education (internship & residency training) was obtained to the state of eventual practice location. At that time they reported a decreasing trend in percent of physicians locating in the same state as their medical college. Of the total physicians graduating in 1930, 55.7% chose practice locations in the same state as their medical school; of the physicians graduating in 1950, twenty years later only 45.6% were practicing in the same state as their medical school. Mason[2] recently published data from a similar study of 1960 medical school graduates.

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[1] Weiskotten, H.G., Wiggins W.S., Altenderfer M.E. et al: Trends in medical practice: An analysis of the distribution and characteristics of medical college graduates, 1915-1950 J. Med. Educ. 35:1085-1086, 1960.

[2] Mason, H.R.: Medical School, residency, and eventual practice location. JAMA, July 7, 1975. Vol. 233, No. 1, p.49-52.

He found that in 1975 only 42.7% (38.4% for New York) were practicing in the same state in which they obtained their medical education.

In their cross-sectional regression analysis Fein & Weber[1] found that a 10% increase in the number of medical graduates of a state led to only a 3.2% increase in the number of such graduates locating in the state. Mason also reported an overall 51.7% (50.1% for New York) of interns and residents who were 1960 graduates were practicing 15 years later in the same state in which they took their hospital training. Mason's findings confirmed these relationships reported earlier by Weiskotten and his associates and demonstrated "the increasing relationship between state of graduate training and state of practice."

Such data were used by Indiana when it earmarked additional state funds for medical education. Some funds were designated by the legislature for increasing the number of students entering medical school, but major expenditures were made to increase the number of positions for interns and residents from 428 to 720, thus expanding graduate education opportunities into eight cities from an earlier three cities. "These graduate education opportunities have been a key factor in retaining 60% of all medical graduates within the state compared to 40% six years ago."[1]

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[1] Fein, R., and Weber, G.I. Financing Medical Education McGraw-Hill, 1971.

The Task Force recommends that the State provide financial support for the expansion or development of new residency training programs in primary care in order to yield annually one hundred additional physicians from such training programs.

We further recommend that the Regents urge the twelve medical schools to:

(1) Add or expand present COTRANS or Fifth Pathway places by upgrading community hospitals and other potential teaching facilities not used now for instruction of medical students.

(2) Add and/or expand their programs in primary care; any expansions in specialized programs should be limited to those specialties involved in the delivery of primary care: internal medicine, pediatrics, family practice and general practice.

(3) Adopt community hospitals and/or other appropriate facilities for medical instruction.

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[1] Indiana's system for statewide medical education, Dean's office, School of Medicine, Indiana University, Indianapolis, 1973.

It would seem from the information and experience cited earlier that the legislature and the medical schools should consider most seriously and implement these recommendations, if an appropriation can be made. The results of such implementation would be succinctly described as follows:

(1) increasing the available number of places for clinical instruction of undergraduate medical students (COTRANS and Fifth Pathway), thus increasing the annual number of physicians graduating in New York State.

(2) increasing the number of hospital training positions (and physicians trained) in specialty areas related to primary medical care, and also increasing the number of physicians who will elect to locate their practices in New York State.

(3) The quality of medical care in those upgraded community hospitals would be improved, and the medical service to these communities would likewise be broadened and improved.

Since the purpose of these recommendations and of our study is to propose a plan for better medical care to areas presently medically underserved, the state could, by providing sufficient funds, accomplish much toward the goals of better geographic and specialty distribution of physicians, an increase in the number of physicians graduated from New York medical schools, an increase in the numbers of physicians locating in this state, and a higher quality of medical care.

Not every community hospital is a suitable candidate to become a teaching hospital, and not every community needs such a facility. There are several large and generally excellent hospitals in the New York City metropolitan area which either have only a very limited affiliation with a medical school or else none at all. By adding full time faculty positions and other necessary staff and limited facilities where needed in such institutions they could become more closely affiliated with a medical school and achieve teaching hospital status.

The Regents Task Force is aware that some conversations of a preliminary nature have taken place between certain medical schools and some such hospitals. The lack of funds prevents further planning and consummation of such discussions.

The Upstate Medical Center at Syracuse, the University Center at Binghamton, and the SUNY administration have recognized the potential in a consortium of hospitals in the Binghamton area of the Southern Tier, as mentioned elsewhere in this report, and are planning to create a clinical medical education campus in that locality.

A consortium of similar hospitals in the mid-Hudson area is also involved in preliminary discussions with another medical school, with the purpose of becoming affiliated for medical and graduate medical education.

The Plattsburgh area, as also described elsewhere in this report, will have a hospital with a University of Vermont affiliation.

Central New York is fortunate to have the superior Mary Imogene Bassett Hospital in Cooperstown, under the affiliation with Columbia University's College of Physicians and Surgeons. This relationship has been the prototype, at least in this state, for such an exemplary relationship between a hospital in a small upstate community with a medical school nearly two hundred miles away.

This leaves, then, only the Utica-Rome area as a major population center in the state without significant hospital affiliation with a medical school. There is some clinical potential in the Utica-Rome area with the Slocum-Dickson group practice, and with a total of 2418 beds, including 1348 beds at the Utica State Hospital. The desire to have a medical education program has been expressed by members of the community leadership and by members of the medical profession. Interest on the part of some medical schools, and a coordinated response from a consortium of medical resources in the community, plus adequate planning and funding, could bring medical education at the undergraduate clinical and graduate levels to the Utica-Rome area.

In its just published report[1] on "Physician Manpower and Distribution; The Primary Care Physician," the Coordinating Council on Medical Education listed one of its recommendations as follows:

> "As a national goal, schools of medicine should be encouraged to accept voluntarily a responsibility for providing an appropriate environment that will motivate students to select careers related to the teaching and practice of primary care. An initial target of having 50% of graduating medical students choose careers as primary care specialists appears reasonable.
>
> "State governments and their agencies responsible for health and education should be aware of the documented fact that the retention of physicians within their jurisdiction is to a significant degree dependent upon the location, the type and quality of residency programs within the state. Financial support directed to the development of high-quality residencies in family practice, and in internal medicine and pediatrics with orientation toward primary care, would almost inevitably be a sound investment on behalf of the people within a state."

The report concludes as follows:

> "However the patterns of care develop in the future, it must be emphasized that there is currently a serious need for more primary care

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[1] _Journal of the American Medical Association_, August 25, 1975. Vol. 233 No. 8 p. 880

> physicians, and this need will increase in the years immediately ahead. Major efforts and financial support should therefore be provided for increasing the number of family physicians, and internists and pediatricians committed to the delivery of primary care. Support for this development should be provided by reallocation of existing resources, where possible, or by the addition of new resources where necessary."

This report of the CCME confirms our own findings and recommendations, as related to New York State.

The Role of a "Brokerage" Office

The task of conducting a successful campaign of matchmaking between communities and physicians is a major undertaking which would require the well-organized full time efforts of knowledgeable individuals. At the outset it would involve a careful analysis of the needs of each underserved area and a realistic evaluation of the kind of medical team required to meet these needs. There would have to be a considerable amount of public consultation with, and education of, the citizens of the communities to be served, many of which still hold to the hope of a village doctor in every hamlet, so that the concept of centrally located medical teams can be accepted as a far more satisfactory method of development of medical manpower than the scattering of isolated doctors about the countryside.

Assuming the success of such an educational effort, it then becomes necessary to initiate the difficult political process of organizing an intercommunity cooperative effort to plan and execute the next steps. A touchy subject would be the identification of the best location for the medical facility based on transportation, existing resources and other considerations peculiar to the region. Inevitably this would lead to inter-community competition.

Having resolved that problem, the next to be faced is that of the size and constitution of the professional team, taking into account the size of the population to be served and also, when it comes to specialty mix, the time and distance from larger centers.

The broker must give considerable attention to the recruiting process itself, for it will be his task to make the rounds of the house staff quarters of the teaching hospitals where he must be prepared to answer a barrage of questions from his candidates and their families. If things go well, he may interest several recruits who, in the course of their graduate training, have developed good working relationships and who would find professional and social companionship while practicing in a more or less remote area. But even if such group recruiting does not work out, the success or failure of his mission will depend to a great extent on finding a group who will be congenial.

Because visits to the area by candidates and their families will be of major importance, the broker will need to plan carefully for these visits, bringing community residents actively into the proceedings. This is the time to try to avoid mismatches and misapprehensions. It is a time of frank discussion of, among other things, the local economic situation. The broker hopefully will have explored with the community the possibility of start-up assistance, if this seems necessary, and will have advised the community on the possibility of offering such aid as tax abatement, provision of plant facilities, etc. He will also have explored the possibility of external funding from public and private sources.

Fully as important to ultimate success will be the role which the broker might play in catalyzing arrangements for technical and professional back-up by larger centers as well as opportunities for continuing education which a medical school might be able to furnish. This latter might include the participation of the recruited physicians in the educational programs of the school, especially as they relate to rural primary care. Any of these efforts which would help to avoid professional isolation and stagnation, common reasons why doctors leave primary practice in remote areas, will be well worth the broker's attention. His activities as a liaison officer could be significant.

Whether a brokerage office is set up in the State government or through a private agency, it would seem as though no large bureaucratic organization would be necessary. A few well informed and well connected individuals could, we believe, accomplish much. The Task Force, therefore, suggests that the State contract with an external agency, such as the Medical Society of the State of New York or the Associated Medical Schools of New York and New Jersey, at the level of $75,000 per year to provide such a brokerage service to medically underserved areas of the state.

The Possible Role of Preceptorships

The inclusion of an elective preceptorship in a remote practice setting as an option in the medical curriculum has been offered by several medical schools for several years. Because we do not have data on the actual numbers of such students who have later located their practices in the same or in similar medically underserved areas, it is impossible to draw any direct relationship between the preceptorship program and its effect on the practice location of physicians. However, it does appear quite likely that at least an indirect relationship may exist as exemplified by the Edward John Noble Summer Fellowship Program of SUNY's Upstate Medical Center. This program is an excellent example of how to acquaint medical students (and their families) with family medicine and primary health care as practiced in rural settings in the North Country.

Medical students may take this summer experience as an elective course in the medical curriculum between the junior and senior years. The course runs for twelve weeks. Stipends for the students are provided by the Edward John Noble Foundation and an HEW grant and the hospitals provide the student's room and board. In 1974, 37 students were involved in 15 practice settings (learning sites). Although Upstate medical faculty are monitoring the program and the majority of students are from the Upstate Medical Center, students from nine other medical schools have participated also in the program.

Preceptors evaluate the student's performance early and at the end of their relationship; these assessments become a part of the student's scholastic record. Students receive training in what they regard as the real world of medicine.

A significant number of Noble summer fellows have entered family practice; 73% are still in training. Seminars and decentralized opportunities for continuing medical education for health care personnel at all levels are developing rapidly. The North Country no longer presents the medical isolation which it did just a few years ago. Viable consultation links are formed.

The North Country communities have responded remarkably by involvement in physician recruitment. Physicians who investigate the North Country area for practice location see the opportunities rather than the disadvantages. In January 1973, there were 45 vacancies for physicians in 16 communities in four North Country counties. Eighteen months later, by July 1974, 63 physicians had entered these areas to establish practice.

SUMMARY OF RECENT ACTION ON FEDERAL HEALTH MANPOWER LEGISLATION

As of September 3, 1975

A brief review of recent Congressional action on health manpower authorization and appropriation legislation is given below.

1. Labor-HEW Appropriations Bill---H.R. 8069. This legislation would provide $3.75 billion for the Labor Department and for many activities of the DHEW, with the exception of education which is funded in a separate bill (H.R. 5901). The House passed H.R. 8069 by a vote of 279-139 and the Senate Appropriations Subcommittee on Labor-HEW approved their version of the bill shortly before the August recess. However, the bill will not go to the full Committee on Appropriations until the week of September 8th, after Congress has voted on the President's veto of the Education bill. The override vote, scheduled for September 9 in the House, will provide an indication of the ability of Congress to reorder Presidential budget priorities. The House version of Labor-HEW Appropriations Bill contains virtually no funds for health manpower since no authorizing legislation existed at the time of H.R. 8069's passage.

2. Comprehensive Health Manpower Legislation. Although both the House and Senate had passed comprehensive health professions support legislation last year, the two bodies were unable to resolve differences between the bills and the legislation died when the 93rd Congress adjourned in December. The House Subcommittee on Health and Environment held additional hearings this spring and reported the Health Manpower Act of 1975, H.R. 5546, which passed the House on July 11. The principle provisions of the bill are:

(a) Continuation of teaching facility construction assistance--The authorization for grants is set at $25 million for fiscal years '76, '77, and '78. The authorization for loan guarantees and interest subsidies would be set at $2 million, $3 million, and $3 million for the same period.

(b) Continuation of student assistance---The loan program is reauthorized at $30 million for the next 3 fiscal years, and traineeships for public health students are authorized at $6 million for the three years. The unconditional scholarship program is phased out, but substantial increases are provided in the National Health Service Corps scholarship program. The authorization for the NHSC program would be set at $40 million in FY'76, $80 million in FY'77 and $120 million in FY'78 and the program is modified to make it more attractive to participants and communities.

(c) Continuation of capitation---The amount of aid and requirement for receipt of capitation funds by Schools of Medicine, Osteopathy and Dentistry: $2,100 per student per year for FY'76 and '77 and $2,000 for FY'78. Beginning in school year 1976-77, schools must contract with students to repay the amount the school receives in capitation. Pay back is waived however for students who agree to practice in underserved areas. In addition schools must either expand enrollment in their first or third years, or operate a remote site training program in which 50% of their students will have spent, by graduation, at least six weeks.

The bill also extends eligibility for start-up assistance to schools of public health, veterinary medicine, optometry, pharmacy, and podiatry and continues such assistance to medicine, osteopathy, and dentistry. The financial distress grant program is extended. Substantial revisions are made in the special project grants and contracts authority, and support is included for:

(a) Training in family medicine

(b) Departments of family medicine

(c) Disadvantaged students

(d) Area health education centers

(e) Special projects for optometry, podiatry and pharmacy

(f) Computer technology

(g) Emergency medical services training

(h) Training of U.S. foreign medical students accepted into the third year of U.S. medical or osteopathic schools

(i) Training of physician assistants and expanded function dental auxillaries

One of the more controversial sections of the legislation as proposed by the Committee would have limited the first year positions in accredited medical residency programs. This provision was defeated when the bill was considered by the full House.

Unlike the House, the Senate had held no hearings on health manpower this year until H.R. 5546 had passed. Following passage, Senator Edward Kennedy, Health Subcommittee Chairman, held one day of hearings on rural health manpower and two additional days of hearings are tentatively scheduled for September 16th and 17th. During the hearing in July, Senator Kennedy stated that he did not believe the House-passed bill would attract sufficient health personnel to rural areas. Last year, the bill reported by the Health Subcommittee and sponsored by Senators Kennedy and Javits was defeated on the floor of the Senate. Opposition to the Kennedy-Javits bill centered on a controversial provision which would have required, as a condition for institutional capitation, that health professions students sign agreements with the HEW to practice in underserved areas. Another controversial section of the bill would have proposed a minimum national standard for state licensure of physicians and dentists. The substitute legislation passed by the Senate, in lieu of the Kennedy-Javits bill, required that only 25% of the students agree to practice in underserved areas. Although Senator Kennedy remains supportive of mandatory service, he might compromise on a bill which contained increases in student aid tied to service.

The Administration has had little input into health manpower legislation since their proposals have been primarily aimed at phasing out many of the programs. At the Kennedy hearing in July, however, the HEW spokesmen stated that they plan to introduce a new bill. It is rumored that this new legislation would continue capitation at approximately the current levels and retain support of other programs.

The action on health manpower legislation now shifts from the House to the Senate and although the Senate subcommittee plans to move quickly, Senate approval of a bill could not take place before October. Because Senate and House will have to reconcile the two versions of the bills in conference, a new law isn't expected until at least late fall.

3. Health Professions Loans ---The emergency one-year authorization for this program expired at the end of June. Because there is no authorization, funds will be provided under the Continuing Resolution only for students who had received loans in the past. Award notices should go out to institutions the week of August 25th. Institutions may make loans to new

students if funds are available from last year's award to the school or from repayments. The Senate Sub-Committee on Health had attached a provision reauthorizing the loan program to S. 988, the National Heart and Lung Institute legislation, but this bill has not yet been approved by the full committee. The House reauthorized the loan program in H.R. 5546.

4. National Health Service Corps Scholarship Program and Health Professions Scholarships.

   (a) National Health Service Corps (NHSC) scholarship program---Authorization expired in June and the program will be operated under the Continuing Resolution, at a level of $22.5 million. The House-passed Health Manpower bill, H.R. 5546, would increase the authorization for this program to $80 million in FY'77, and $120 million in FY'78.

   (b) Health Professions Scholarship Program authorization expired two years ago. This program was not included in H.R. 5546 and will probably be replaced by NHSC scholarship program. Funds will be provided, however, to meet commitments to students who had previously received awards.

5. Special Health Revenue Sharing Act of 1975---P.L. 94-63. This bill enacted over the President's veto authorizes funding for a variety of programs including:

(a) State formula grants for health service programs

(b) Research and training in family planning

(c) Community health centers

(d) Migrant health centers

(e) National Center for Prevention and Control of Rape

(f) The National Health Service Corps Program (not scholarships)

(g) Nurse training programs

Briefly, the nurse training provisions of the bill would reauthorize grants, loan guarantees, and interest subsidies for construction or renovation of facilities. Capitation grants would be continued with $400 authorized for four-year schools, $275 for two-year schools, and $250 for hospital-based schools. Grants would also be available for advanced training, short-term training and nurse practitioner programs; nurse training scholarship and loan programs are also continued.

FINANCING MEDICAL EDUCATION IN NEW YORK STATE

INTRODUCTION

Public policy issues are often addressed by posing three questions: (1) Where are we now and how did we get here? (2) What principles and guidelines should apply to plans for the future? and (3) Where should we like to be in some future target year and how do we get there? Where we are at present is often a matter of historical accident and evolution: the cumulative result of some planning, political pressures and necessities, random failures and successes. The present state of financing of medical education in New York State (and perhaps in the nation) reflects those factors and forces. In the following, the Task Force addresses these questions in the order in which they have been posed.

We are concerned here with the financing of education leading to the M.D. degree. It is well known, and other sections of this report have made clear, that medical schools have a broad range of activities and commitments, and that they differ substantially from one another in the number, type and depth of these commitments and the resources available to meet them. In varying degrees, the schools are engaged in (1) educational programs leading to the M.D. degree, (2) training of interns and residents in affiliated hospitals, (3) medical research, (4) patient care,

(5) continuing education for medical practitioners, (6) operation of educational programs for nurses and physician's assistants and for a number of allied health professions, and (7) extension and public service activities in their communities including the operation and supervision of specialized clinics and community health care centers.

Although the medical schools are concerned with the financing of the totality of their operations, the immediate concern of this Task Force, pursuant to its charge, must be with the costs and financing of education leading to the M.D. degree.

New York State's eight independent and four public medical schools are supported, as are most higher educational institutions, by a combination of Federal and State funds, philanthropy from private sources, institutional funds and payments by students.

Financing of Independent Medical Schools in the State

New York State provides unrestricted financial aid to its independent medical schools through three programs. The first of these was initiated in 1967 providing support for expansion of enrollment in programs leading to the M.D. degree. Each school is paid $6,000 for each student enrolled in each class year over the average number of students enrolled in each respective class in the five-year period 1961-65. Contracts with the schools paralleled Federal legislation in requiring that each institution expand first-year enrollments by a minimum of five students. Payments are limited to twenty-five students per class. Legislation adopted in 1974 permitted the payment of one-third more than the base amounts for students enrolled in three-year programs. Thus, each school could qualify for a maximum of $600,000 per year or $2.4 million for the three or four years of the educational program. Through gradual increases of enrollments over the past eight years, most of the schools now qualify for the maximum grants (Table 24).

A program of direct unrestricted aid to all qualifying independent colleges and universities was adopted by the 1968 Legislature and provided its first payments to institutions in the 1969-70 academic year. The legislative formula of Section 6401 of the Education Law is based upon the number of degrees conferred: originally $400 for each bachelor's and master's degree and $2,400 for each doctoral degree; in 1973, the grants were increased to $800 for each bachelor's degree, $600 for the master's degree and $3,000 for the doctoral degree. Now popularly known as the Bundy Program (named after the chairman of the Select Committee which recommended such aid), the program provides aid to the

Table 24

NEW YORK STATE AID TO INDEPENDENT MEDICAL SCHOOLS FOR SUPPORT OF EDUCATION FOR THE M.D. DEGREE

Academic or Payment Year
1974-75
($ Thousand)

School	Capitation Sect. 6402	Expansion Contracts	Bundy[1] Aid	Total Aid	M.D. Enroll.	Aid[3] Per Capita	Construct.[2] Grants ($ mil)
1	$ 644	$ 600	$ 225	$ 1,469	425	$3,455	$ 3.9
2	960	564	363	1,887	577	3,270	5.0
3	676	462	252	1,390	415	3,350	1.1
4	358	600	87	1,045	281	3,717	4.0
5	1,486	742	388	2,165	647	4,042	5.0
6	1,133	594	360	2,087	668	3,124	5.0
7	570	600	195	1,365	387	3,526	3.0
8	1,337	600	426	2,363	579	4,082	5.0
Totals	$7,161	$4,762	$2,296	$14,219	3,979	$3,575	$32.0

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[1] Bundy Aid for MD degrees only. Some institutions earn additional funds from graduate degrees, nursing and allied health professions programs.

[2] Construction grants authorized or paid to 1975.

[3] Aid per capita in full dollars.

independent medical schools either directly, to three institutions, or indirectly through aid to five parent universities which have medical schools. The institutions, thus, receive $3,000 for each M.D. degree conferred. Excluded from the count of degrees are those conferred on students for whom enrollment expansion aid is paid. While the amounts shown in Table 24 are only those paid for M.D. degrees, some of the schools also earn additional funds from degrees conferred in other graduate and undergraduate programs.

Thirdly, the institutions receive capitation aid for all students enrolled excluding those on behalf of whom enrollment expansion aid is paid. The capitation legislation was adopted as Chapter 940 of the Laws of 1970 and initially provided $1,500 for each student enrolled in an M.D. program. The 1974 Legislature modified this formula, continuing a grant of $1,500 for each lower-division student but increasing the grant for those in the upper-division to $2,500. The new Section 6402 of the Education Law also provided a supplemental one-third of the formula grant for students in three-year programs. The capitation aid also is paid for students enrolled in the COTRANS and Fifth Pathway programs.

The medical schools have also been provided capital grants tied in with the enrollment expansion contracts and based upon eligibility for Federal construction grants. Most of these grants have already been made over the past five years. They range from $2.0 million for an institution with total enrollment of fewer than 300 students to $5.0 million for one with total enrollment of 500 or more.

As set forth in Table 24, the independent medical schools received a total of $14.2 million of State funds for operational support of their M.D. educational programs during the 1974-75 academic year: $4.8 million in enrollment expansion grants, $7.1 million in capitation aid and $2.3 million for degrees conferred. Four of the eight schools qualified for and received the maximum capital construction grant of $5.0 million and the total of such grants authorized and paid comes to $32.0 million. The three sources of operating aid provide an average of almost $3,600 per student per year. New York is not alone among the states in providing financial support to independent medical schools. Currently, 21 states provide funds approaching $50 million per year to more than 35 independent medical schools.

Federal Aid to New York State Independent Medical Schools

The independent medical schools of the State received approximately $10.4 million of direct institutional aid from the Federal government during their 1973-74 academic years (Table 25). Early Federal legislation predicated general

Table 25

FEDERAL AID TO NEW YORK STATE INDEPENDENT MEDICAL SCHOOLS[1]

1973 FFY
($ Thousand)

	Institutional Aid			Student Aid		
School	Formula Grants	Special Projects	Total	Scholar-ships	Loans	Total
1	$ 777	$ 45	$ 822	$ 52	$ 171	$ 223
2	1,029		1,029	78	256	334
3	702		702	51	169	220
4	387		387	26	86	112
5	1,196	850*	2,046	79	260	339
6	1,151	337	1,488	80	264	344
7	781	141	922	49	162	211
8	1,210	1,785	2,995	77	255	332
Totals	$7,233	$3,158	$10,391	$492	$1,623	$2,115

*Includes $762,000 financial distress grants.

[1] Funds awarded through June 30, 1973. Additional funds were later released but data are not available. Aid applicable to 1973-74 academic year. These are HEW funds for educational purposes only; exclude research grants, etc.

aid upon enrollment expansion. It supplemented these funds with grants for "special projects" for which the schools would be rewarded and compensated: enrollment of minority students, curricular modification, community service, programs in family medicine, innovations, etc. Supplemental grants were also available for institutions with demonstrated financial need or in financial distress. Legislation adopted in 1971 provided for general capitation grants with authorized levels of $2,500 for each student enrolled in the first three years and $4,000 for each graduate. Grants were also continued for special projects and for institutions in financial distress.

As with many Federal programs, these legislative formulae have been funded by appropriations considerably less than those authorized. The capitation grants have been funded at approximately 64 percent of the authorized level, providing an average of about $1,865 per student instead of the $2,875 authorized. Nonetheless, these grants, coupled with special project and distress grants for some of the institutions, have provided New York State's medical schools with important basic support. The 1973 funds, applicable to the 1973-74 academic year, averaged $2,600 per student for the eight independent medical schools of the State (Table 26). Federal scholarship and loan programs assisted the schools indirectly by providing funds to students to meet tuition

Table 26

FEDERAL INSTITUTIONAL AID TO NEW YORK STATE INDEPENDENT MEDICAL SCHOOLS ENROLLMENTS AND AID PER STUDENT[1] 1973 FFY

School	Total Institutional Aid ($1000)	M.D. Enrollment	Aid Per Student
1	$ 822	425	$1,934
2	1,029	577	1,783
3	702	415	1,692
4	387	281	1,377
5	2,046	647	3,162
6	1,488	668	2,228
7	922	387	2,382
8	2,995	579	5,172
Totals	$10,391	3,979	$2,610

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[1] All Federal aid shown here and in foregoing and following tables are HEW funds for educational purposes only. They exclude research grants from HEW and research or other grants from any other Federal agencies.

payments. Federal scholarship funds made available to the students in independent institutions came to $500,000 in 1973-74 (Table 25). These funds provided only some 4 percent of those needed to meet the $12.0 million of tuition billed by the institutions in that year. Loan funds of $1.6 million taken by the students in these institutions covered an additional 13 percent of tuition charges. Hence, in total, Federal student aid provided less than 20 percent of the funds needed by students to meet the tuition charges of the institutions.

The total amounts of institutional and student aid funds made available by the Federal government to the independent medical schools of the State since the beginning of these programs in 1965 are summarized in Table 27. It should be noted that construction grants totaling $52.6 million have been of substantial benefit to the institutions. Coupled with the matching State grants, the capital grants have enabled all of the institutions to improve and enlarge facilities both to accommodate expanded enrollments and to improve the quality of facilities for the conduct and administration of educational programs. Yet, consistent with the Emersonian principle of compensation, the new and expanded facilities have also imposed significantly higher costs upon the institutions for their operation and maintenance. Somehow,

Table 27

FEDERAL AID TO NEW YORK STATE INDEPENDENT MEDICAL SCHOOLS*

1965-1973 FY'S
($ Thousands)

	Institutional Aid				Student Aid			Capital Aid
School	Formula Grants	Special Projects[1]	Financial Distress[2]	Total	Scholarships	Loans	Total	Construction Grants
1	$ 2,278	$ 867	$1,124	$ 4,269	$ 298	$1,023	$ 1,321	$ 3,344
2	3,539	-	-	3,539	508	1,084	1,592	964
3	2,497	-	-	2,497	346	776	1,122	112
4	1,142	50	800	1,972	121	269	390	17,842
5	3,795	148	3,211	7,154	522	1,558	2,080	6,690
6	3,895	1,113	-	5,008	534	1,942	2,476	3,081
7	2,425	351	227	3,003	309	878	1,187	17,606
8	3,565	3,982	1,500	9,047	443	1,599	2,042	3,003
Totals	$23,136	$6,511	$6,862	$36,509	$3,081	$9,129	$12,210	$52,642

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[1] Excluding "financial need"; primarily for enrollment increases, small amounts for efforts in enrollment of minority and low income students and the activities sought by Federal legislation.

[2] Financial distress grants include those which, prior to 1972, were based on "financial need."

*Not including certain additional funds for 1973 FY which were released after June 30, 1973.

the Spanish proverb that each child is born with a loaf of bread under his arm to provide for his sustenance, does not necessarily apply to the nativity and nurture of educational buildings.

Although the provisions of the 1971 legislation for health manpower support were to expire by June 30, 1974, appropriations were continued by congressional resolutions through the 1974-75 fiscal year and the capitation grants were again funded at the level of 64 percent of authorized amounts. Hence, the aid going to New York State institutions, shown in previous tables, prevailed at the same levels through the past academic year. However, appropriations for 1975-76 have been reduced to 47 percent of authorizations. This means that the aid per student enrolled will drop from an average of $1,865 of the past three years to $1,350 for 1975-76. The implications of this funding level will be covered at a later point along with the prospects for Federal support in the years ahead.

COST STUDIES: THE INSTITUTE OF MEDICINE AND SPECIAL STUDIES OF NEW YORK STATE INSTITUTIONS

Neither the gross amounts of Federal and State aid in support of medical education nor the amount of such aid per student enrolled has analytical relevance unless it can be related to the total income sources of the institutions, their expenditures on educational programs and the cost per student enrolled. Although some studies of medical school financing and costs of education have been conducted over the years, no thorough, and generally acceptable, studies of costs had been produced, until 1974, which could serve as a basis for evaluating the impact of Federal and State aid programs and planning and developing new aid formulae.

Pursuant to a congressional mandate contained in the 1971 health professions legislation, the Institute of Medicine of the National Academy of Sciences conducted a study of the costs of education in the health professions. The study was based on 1972-73 data and was published in January of 1974.[1] The study produced unit costs for the education of students pursuing the M.D. degree as well as such costs for education in a number of the other major health professions. The cost figures have been widely quoted (and criticized) and have appeared in several congressional reports supporting new legislative proposals.

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[1] Institute of Medicine, Costs of Education in the Health Professions, National Academy of Sciences, Washington, D.C. January, 1974.

The Task Force has, earlier in this report, indicated the fact that medical schools are highly diversified institutions. They vary greatly in size, range of educational program, and in the level and sources of funds available to them. They vary also in the degree of their commitment to basic and clinical research and the depth and breadth of their involvement in patient care in affiliated hospitals. The Institute of Medicine was well aware of the complexity of the institutions and the concomitant problems in determining and allocating the costs associated with the multiplicity of programs and activities. The Institute's report clearly shows the difference in costs of medical and other education attributable to the wide diversity among the 14 public and independent institutions covered by the study.

While the Institute's study and report provides ample detail on the elements of costs and on the procedures employed, three summary cost figures are finally produced for education in each of the professions: instruction cost, education cost and net educational expenditure. Instruction cost includes the direct costs of faculty and staff salaries and fringe benefits, supplies and materials and the indirect costs of plant operation and maintenance, administration, general institutional expenditures, student services, etc. For each educational program, these costs were allocated on the basis of faculty time spent in that program or activity.

Two other elements are then added in to instruction cost to arrive at education cost: research activity and expenditure associated with and essential to the teaching function and patient care essential to teaching. The resulting figure of education cost is then the full resource cost of providing education to students. Two offsets to this cost are then applied: a share of total research income which can be applied to joint faculty-student research activity and a comparable share of patient care income which can be applied to this joint faculty-student activity. It was found that there were very great differences among institutions in both the amount and cost of research and patient care activity. Similarly, there were great differences in the research and patient care income of the institutions and the proportions of that income which could, properly, be offset against the cost of the activities. Subtraction of the income offsets from education cost produces a figure called net educational expenditure. This figure, then, represents the educational expenditures which must be covered by sources of funds other than the research and patient care income already allocated. The study group believed that this should be the net figure against which funding formulae might be measured.

Although the findings of the Institute of Medicine study could be and are being used in the appraisal of Federal and State support to New York medical schools, the Task Force believed that a similar study should be conducted of each and every medical school in the State. The State University of New York, both for its own purposes and to contribute to the efforts of the Task Force, had already initiated such studies for its institutions. The eight independent medical schools also agreed to the study and assigned the coordination of it to the Associated Medical Schools of New York and New Jersey. In order to assure consistency of procedures and comparability of data, contracts for the conduct of the study were negotiated with the same management firm which had carried out the study for the Institute of Medicine. The cost to the medical schools for this work was high, ranging from $25,000 to $40,000 per school in payments to the contractor and, perhaps, an equal amount provided by the schools in terms of time and effort of their own personnel. (The Task Force does not believe that these cost studies should be done every year. Cost figures can be updated by applying inflationary factors. Only if and when an institution makes substantial changes in programs, organization or operating procedures, would new studies be called for.)

Upon completion of the studies, reports were sent to each of the schools and they were asked to comment on the findings as they related to their own institutions. The comments and criticisms received from the deans and fiscal officers of the schools reflected divergent views as to the validity of procedures, the accuracy of data and the levels of costs finally determined. The findings of the Institute of Medicine in its national study were subjected to considerable analysis and criticism in the months following their publication; the reaction in New York to the special studies conducted here has been similar.

Nonetheless, the Task Force believes the studies were carefully done and that, if one concentrates on the overall averages for the two groups of public and independent institutions, the figures can be confidently used as general guides to the costs of medical education. Finally, these are the only studies we have had in recent years which have been conducted by specialized professionals and guided by advisory committees, members of which were representative of higher educational institutions, governments and diverse academic disciplines including that of medicine.

Dollar cost figures are only one measure of educational activity. The institution with high costs or expenditures per student should be deemed to be neither inefficient nor profligate. Its costs may be high because of its location, the age and condition of its facilities, the quality and compensation of its faculty and staff, the range of its programs and the internal and external resources which it is able to command. Nor is the low cost institution one which is necessarily more efficient or penurious. The conditions and factors noted above may be reversed for this institution. More often than not, the low cost institution is leaving many things undone which should be done and is simply unable to meet deficiencies in programs and staffing because of the inadequate funds available.

The Task Force hopes that the reader will keep these cautions and caveats in mind as they study the cost figures and relate them to other variables.

We turn, then, to Table 28 which summarizes the cost data for New York State medical schools and for the national sample of schools studied by the Institute of Medicine. The figures for the IOM study have been increased by 10 percent to cover inflation of costs between 1972-73 and 1973-74 to make the two sets of data comparable. (It should be noted that all figures might now be increased by an additional

Table 28

September, 1975
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EDUCATION COSTS PER MEDICAL STUDENT STATE OF NEW YORK VS. ADJUSTED INSTITUTE OF MEDICINE NATIONAL STATISTICS

	SUNY SCHOOL[4]		ADJUSTED IOM *** PUBLIC SCHOOL		NEW YORK PRIVATE SCHOOL **		ADJUSTED IOM PRIVATE *** SCHOOL	
	Average	Range	Average	Range	Average	Range	Average	Range
INSTRUCTION COST								
Faculty Salaries	$ 3,078	$ 2,830 to 3,373	$ 3,256	$2,200 to 4,290	$ 4,192	$ 2,387 to 5,661	$ 4,098	$ 1,760 to 4,950
Non-Faculty Salaries	1,370	1,215 to 1,481	3,014	2,201 to 4,290	1,764	477 to 4,176	3,245	1,320 to 5,500
Other Direct Cost	1,568	1,015 to 1,819			1,900	817 to 4,924		
Total Direct Cost	6,016	5,603 to 6,260	6,270		7,856	4,681 to 12,810	7,343	-
Indirect Cost	2,842	2,224 to 3,466	1,892	1,430 to 2,310	2,765	1,819 to 4,401	1,746	1,320 to 2,200
TOTAL INSTRUCTION COST	8,858	7,826 to 9,726	8,162	5,940 to 10,010	10,621	7,058 to 14,629	9,089	4,510 to 12,100
Research Essential to Education	3,201	2,106 to 3,675	3,267	2,640 to 4,015	3,800	2,536 to 5,151	3,900	2,420 to 5,445
Patient Care Essential to Education	1,031	860 to 1,417	1,760	1,320 to 1,980	1,800	1,164 to 3,256	2,200	990 to 2,970
TOTAL EDUCATION COST	13,090	10,794 to 14,750	13,189	10,560 to 15,510	16,221	11,105 to 23,036	15,189	7,920 to 20,515
Income Offset for Research	(677)	0 to 1,466	(2,024)	550 to 4,070	(2,300)	0 to 5,024	(2,500)	0 to 5,500
Income Offset for Patient Care	(306)	0 to 596	(781)	0 to 1,980	(2,800)	0 to 5,537	(1,800)	0 to 4,400
TOTAL NET EDUCATION COST	$12,107	$10,198 to 14,210	$10,384	$ 8,635 to 12,045	$11,121	$ 8,681 to 12,475	$10,889	$ 5,665 to 15,565

* Excludes SUNY-Stony Brook, whose education programs are in the development phase.

** Excludes Mt. Sinai, whose education programs are in the development phase.

*** 1972-73 figures increased by 10% to account for inflation.

15 percent if they are to be applied to the 1975-76 year.)

One of the more salient points which emerges from the data is the difference between education costs of the public and independent institutions and net educational expenditures of these two groups. The total education cost of the independent schools averages about 24 percent more than that of the public. Yet, the net educational expenditure per student is about 8 percent less for the independent institution than for the public institution. The difference is attributable to the inability of the public schools to recover income to cover research performed.

Both research and patient care costs are higher for the independent institutions. At the same time, the data indicate that the independent institutions are much more successful than the public in covering a major share of the costs of these activities through income generated and allocated to them. Thus, the State University schools spend an average of $4,200 for research and patient care attributable to education of M.D. students. They recover only $1,000 of these costs in allocated income. The independent institutions spend $5,600 on such activity and recover the bulk of these costs in $5,100 of allocated income. As a result, the final net educational expenditures of the institutions differ by only $1,000 per student. The low income recovery for research of the State University schools also accounts, in large part, for the difference between its net educational expenditures and those of the public institutions in the IOM sample. In turn, these factors largely account for the fact that the IOM public institution had slightly lower costs than those in their independent sample while the SUNY schools have higher net costs than the independent New York schools.

EDUCATIONAL COSTS AND SOURCES OF FUNDS OF MEDICAL SCHOOLS

Whatever the problems may be with respect to the procedures and results of these cost studies, the Task Force now, perhaps audaciously, presents them in proximity to public funding data to assess the impact of the contributions of Federal and State taxpayers (Table 29).

Costs and Financing of Independent Medical Schools

In 1973-74, New York State's three programs of direct institutional aid for medical education averaged $3,550 per M.D. student enrolled in the independent institutions. This aid amounted to 32 percent of the average net educational expenditures per student of $11,100. Federal capitation aid (described in the footnote to Table 29) averaged $1,865 per student or 17 percent of net educational expenditures. Hence, Federal support is only slightly more than one-half the level of State support. The impact of these aid programs on each of the individual institutions differs in accordance with the level of costs of the institutions. The State aid also varies somewhat on a per capita basis, primarily because of the varying amounts of aid coming from each of the three State programs. The principle determining factor here is the difference among institutions in total numbers of students

Table 29

Independent Medical Schools of New York State
Federal and State Aid-Cost Per Student-and Ratios of Public Support

1973-74

School	(1) Educa.* Cost Per Student	(2) Net. Educ.* Expend. Per Student	(3) Total State Aid[1]	(4) Federal Capitation[2]	(5) Total Pub. Aid	Percent Aid of Cost					M.D. Enroll.
						3 of 1	3 of 2	4 of 1	4 of 2	5 of 2	
1	$11,100	$9,350	$3,455	$1,865	$5,320	31	37	17	20	57	425
2	23,000	12,500	3,270	1,865	5,135	14	26	8	15	41	577
3	16,300	12,200	3,350	1,865	5,215	21	27	11	15	43	415
4	N.A.	N.A.	3,717	1,865	5,582	-	-	-	-	-	281
5	12,200	8,700	4,042	1,865	5,907	33	46	15	21	68	647
6	14,500	11,000	3,124	1,865	4,989	22	28	13	17	45	668
7	19,600	12,400	3,526	1,865	5,391	18	28	9	15	43	387
8	16,500	11,700	4,082	2,090	6,172	25	35	13	18	53	579
Average[3]	$16,200	$11,100	$3,550	$1,865	$5,415	22	32	12	17	49	528

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[1] Total State Aid includes capitation under Section 6402, enrollment expansion contracts, and allocated Bundy Aid for M.D. degrees - expressed here per student.

[2] Federal capitation is $2,500 for each student except $4,000 for each graduating student, funded at 64.9% of these authorizations - averaging $1,865 per student.

[3] Averages exclude one developing institution.

*Costs are for 1973-74. State and Federal Aid are based on formulae prevailing in 1974-75.

enrolled and the amount and pattern of enrollment growth in recent years (see again Table 24).

The schools varied also in their income per capita from all Federal institutional aid programs. While Table 29 shows only the amounts received under the general capitation aid program, Table 26 earlier presented the amount of aid per student from all Federal sources applicable to the education of M.D. students. The latter figure came to an average of $2,600 per student for all institutions in 1973-74; the difference in the two figures is primarily attributable to the fact that one institution received a fairly sizeable financial distress grant and two others benefitted from supplemental grants for special projects and large enrollment increases.

In total, we find that basic Federal and State aid programs provided about $5,400 per student or almost 50 percent of net educational expenditures. Finally, it should be mentioned that both the State and Federal aid programs and formulae remained the same through the 1974-75 year. The State formulae and funding levels will also remain constant through 1975-76. However, Federal capitation appropriations will reduce the funding of this program from 64 percent to 47 percent of authorized levels for 1975-76. Proposals for changes in State formulae and prospects for Federal funding will be discussed in the final chapter.

What has been the effect of Federal and State financing devices in stimulating expansion of medical school enrollments? The basic intent and purpose of the earlier financial support programs of both the Federal and State governments were to bring about increases in enrollment of M.D. students. The Federal legislation and State contracts provided operating aid based upon additional students and capital grants were tied to enrollment expansion and the total number of students enrolled in each school. While not predicated upon increased enrollments, the capitation aid programs and the Bundy aid for degrees conferred both produce more funds as institutions grow in total enrollment.

The independent medical schools of the State have increased enrollments since the mid-1960's by 1,300 students or almost 50 percent (Table 30). First-year classes in these institutions have been increased in size by 56 percent. These figures compare very favorably with increases in medical school enrollment nationwide over the same period and even more favorably if one notes that a significant portion of the national enrollment increase is attributable to the founding and growth of new medical schools during this period. All of the independent institutions of the State have increased

Table 30

Enrollment in M.D. Programs
New York State Independent Medical Schools

School	Average Total 1961-65	Total 1974	Increase 1961/5-74		Av. Class 1st yr. 1961-65	1st Yr. Class 1974	Increase	
			No.	%			No.	%
1	244	425	181	74	61	109	48	79
2	461	577	116	25	118	148	30	25
3	335	415	80	24	84	103	19	23
4	-0-	281	281		-0-	81	81	
5	501	647	146	29	127	174	47	37
6	499	668	169	34	126	171	45	36
7	273	387	114	42	70	97	27	39
8	364	579	215	59	95	177	82	86
Totals	2,677	3,979	1,302	49	681	1,060	379	56
Adjusted*		3,698	1,021	38		979	298	44

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*Adjusted totals exclude one developing institution, not operating 1961-65.

enrollments in proportions ranging from 24 percent to 74 percent. First-year classes (and ultimately, graduating classes) have increased from 23 percent to 86 percent. It is quite apparent that the Federal and State financial aid programs have been achieving their objectives. The growth in total enrollments and, more importantly, in entering and graduating classes, is the equivalent of four new medical schools of the average size that existed in the mid-1960's or three schools of the average size existing today. The key question is: Will Federal and State funds be forthcoming in sufficient amounts to provide permanent support for these expanded enrollments and such support for enrollment expansion which may be called for in the future or will some independent schools be forced to contract in enrollments and programs or close down?

Costs and Total Fund Sources of Independent Medical Schools

Table 31 repeats some data which have already been presented in previous tables but includes other data to depict contributions of the various fund sources to coverage of expenditures for the education of M.D. students. The financing of higher education in general, not excepting medical schools, comes from four principal sources: (1) governments, (2) private philanthropy, (3) students, and (4) internal institutional sources. Historically, this

Table 31

New York State Independent Medical Schools Costs and Sources of Funds Per M.D. Student Enrolled[1] 1973-74

School	Net Educ. Expend.[1]	State Aid[2]	Federal Aid[2]	Student Tuition	Instit. Funds[3]
1	$ 9,350	$3,455	$1,865	$2,750	$1,280
2	12,500	3,270	1,865	3,180	4,185
3	12,200	3,350	1,865	2,680	4,305
4	N.A.	3,717	1,865	3,000	N.A.
5	8,700	4,042	1,865	3,180	(387)
6	11,000	3,124	1,865	2,570	3,441
7	12,400	3,526	1,865	2,925	4,084
8	11,700	4,082	2,090	3,000	2,528
Average[4]	$11,100	$3,550	$1,865	$2,900	$2,780

Table 32

Percentage Distribution of Funds Shown in Table 31

1	100	37	20	29	14
2	100	26	15	25	34
3	100	28	15	22	35
4	100	-	-	-	-
5	100	46	21	37	(4)
6	100	28	17	24	31
7	100	28	15	24	33
8	100	35	18	25	22
Average	100	32	17	26	25

See footnotes on following page.

Notes to Table 31

[1] Costs as determined by special cost studies conducted by the same consultants who conducted the studies for the Institute of Medicine, using the same procedures.

[2] State and Federal aid applicable to M.D. education program only.

[3] Institutional funds derived by subtracting other fund sources from Net Educational Expenditures. These funds would include endowment income, gifts and other income allocatable to M.D. education.

[4] Average excludes one developing institution.

has been the pattern. There are those who hold that all higher education should be fully paid for by taxpayers through governments; others hold that students themselves and their families should pay the full cost of education. The Task Force bypasses that controversy over what should be by turning to what is and, at a later point, to what feasibly might be.

Using net educational expenditures of the institutions as the costs which must be covered, we have previously noted that State and Federal aid provide, on the average, 32 and 17 percent, respectively, of the average cost of educating a student in an independent medical school of New York State. In 1973-74 the colleges charged an average tuition rate of $2,900, comprising 26 percent of costs (Tables 31 and 32). For the purpose at hand, we have simply attributed to institutional funds the balance of costs to be covered, averaging $2,780 or 25 percent of these costs. The institutional funds would include expendable gifts received, endowment income and other income associated with educational operations. Obviously, there are considerable differences among institutions in endowment and other income sources and, therefore, in their ability to fund educational operations at the level of expenditures they incur and, perhaps, consider desirable and appropriate for the quality of their programs. One "low-cost" institution is apparently totally supported by public funds and student tuition payments. Four of the colleges tap institutional funds for an average of one-third of total educational operating costs. The absolute level of tuition charges does not differ greatly among institutions and these rates have tended to converge in recent years. If medical schools are to be considered national resources operating for the long-run benefit of all citizens, it would seem that the Federal share of 17 percent of operating costs is relatively low.

Costs and Financing of Public Medical Schools of New York State

As should be expected, the four medical schools operated by the State University of New York are dominantly funded, in their education of students pursuing the M.D. degree, by State appropriations. In its funding program, the Federal government makes no distinction between public and independent institutions. Hence, the State University medical schools receive Federal aid under the same formulae as apply to the independent institutions. The three fully operational public colleges received $3.3 million in capitation grants and a total of $3.4 million in all institutional aid in their 1973-74 academic year (Table 33). An additional $1 million in Federal scholarship and loan funds accrued to these institutions for disposition to qualifying students.

TABLE 33
Federal Aid to Medical Schools Of the State University of New York[1]
1973 FFY
($ Thousand)

	Institutional Aid			Student Aid		
School	Formula Grants	Special Projects	Total	Scholar-ships	Loans	Total
1	$1,507	$	$1,507	$113	$372	$ 485
2	859	108	967	63	208	271
3	922		922	67	221	288
Totals	$3,288	$108	$3,396	$243	$801	$1,044

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[1] Excludes one developing institution. Additional funds were awarded after June 30, 1973 but data are not available from the HEW sources which provided these data.

The cumulative Federal aid payments to the State institutions are summarized in Table 34, showing $11.6 million of institutional aid and $6.3 million of student aid going to the institutions between 1965 and 1973.

More pertinent and comprehensible, again, are the figures expressed on a per student basis and related to educational costs. Federal capitation aid of $1,865 per student amounted to 15 percent of the average net educational expenditures of the public colleges, a ratio slightly lower than that for the independent institutions and attributable to the higher net educational expenditures for the public colleges determined by the cost studies (Table 35).

It is well known that tuition in the public institutions is lower for all programs than in independent colleges and universities. The SUNY tuition rate of $1,600 for students in professional schools, including medical schools, was just over 50 percent of the charges levied by the independent institutions in 1973-74 (the public tuition is now less than 50 percent of the average independent school tuition for 1975-76). Tuition income provided about 14 percent of net costs. We acknowledge that tuition receipts in the State University are credited to general income funds and only a portion of these funds is applied to current operations with the greater part applied to debt service on physical facilities.

TABLE 34
Federal Aid to Medical Schools Of the State University of New York[1]
1965-1973 FFY's
($ Thousand)

School	Institutional Aid[2]			Student Aid		
	Formula Grants	Special Projects	Total	Scholarships	Loans	Total
1	$ 5,284	$ 13	$ 5,297	$ 776	$1,847	$2,623
2	2,882	291	3,173	393	1,226	1,619
3	3,097	-	3,097	428	1,583	2,011
Totals	$11,263	$304	$11,567	$1,597	$4,656	$6,253

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[1] Excludes one developing institution.

[2] See notes to Table 25. The public institutions received no construction grants or financial distress grants.

TABLE 35
State University of New York
Medical Schools
Costs and Sources of Funds
Per M.D. Student Enrolled[1]
1973-74

School	Educ Cost[1]	Net Educ Expend.[1]	State Approp.[2]	Federal Aid	Student Tuition	M.D. Enroll.
1	$13,550	$12,100	$ 8,635	$1,865	$1,600	861
2	14,750	14,200	10,735	1,865	1,600	484
3	10,800	10,200	6,735	1,865	1,600	520
Average	$13,050	$12,150	$ 8,685	$1,865	$1,600	620
		Percentage Distribution				
1	-	100	72	15	13	
2	-	100	76	13	11	
3	-	100	66	18	16	
Average		100	71	15	14	

---

[1] Costs per studies conducted. See notes to Table 28.

[2] State appropriation is derived by subtracting other fund sources from Net Educational Expenditures. The public institutions do have other sources of funds--endowment income, gifts, etc., but these have not been clearly identified so as to permit allocation to M.D. education. Moreover, the State appropriation per student shown here does not differ significantly from that which was allocated.

This accounting and allocation procedure has no bearing on the analysis at hand which seeks to determine the relative contribution of various payers to the costs of medical education.

While other institutional funds may be available and applicable to the educational budget of the public medical schools, the Task Force was not able to isolate these funds and determine their relative contribution. We have, therefore, attributed the balance of funds needed to cover educational expenditures to State appropriations. The figures shown for these appropriations will not reconcile with those appearing in the official budgetary documents. However, we have found that they do not differ so markedly as to distort the total picture. In effect, State appropriations apparently cover some 70 percent of the educational operating costs of the public medical schools.

Other Factors on Costs and Funding

The Task Force wishes to emphasize again that all of the foregoing data and discussion on costs and financing apply only to the activities and commitments of the medical schools in the education of students pursuing the M.D. degree. The medical schools and the much larger health sciences centers with which some are associated have total operating budgets which far exceed and are often multiples of the budget or expenditures for undergraduate medical education. For several of the institutions, the medical research expenditures far exceed those for undergraduate medical education. The institutions are involved in the advanced education and training of interns and residents, of nurses and allied health professionals and of practitioners enrolled in continuing education programs. While the primary charge to the Task Force and, consequently, its immediate concern is that of undergraduate medical education, its members are well aware of the total commitments of the medical schools and of their needs for financial support of all their commitments. Research is dominantly funded by external sponsors, principally agencies of the Federal government. But research is also essential to the maintenance of professional capacity and integral to the teaching of medical students. Similarly, the costs of patient care are dominantly covered by hospital charges to patients and professional fees, both covered in turn, in large part, by third-party payers. But, again, patient care is integral to the teaching of students.

The complexity of the operations of the medical schools, the range, depth and diversity of their programs, the deficiencies which exist and the problems confronting them--none of these made evident or discernible by such figures as "cost per M.D. student"--can be grasped more firmly by reviewing some of the statements submitted by their deans in response to a request by the Task Force (we excerpt from the statements):

School A

> The college lists twelve different educational programs being operated at the present time. Beyond the 400 plus students in the M.D. program, the institution provides education and training for interns, residents and fellows, physical therapists, physician's assistants, primary care nurse practitioners, nursing education, medical and x-ray technology, inhalation therapists and a specialty in nursing anesthesia. The college also has 44 FTE pre-doctoral graduate students in basic sciences.
>
> The college was understaffed in 1966 at the time it was asked and later induced to expand enrollments. It continues to be understaffed today. The present full-time faculty consists of 64 in basic sciences and 157 in clinical science. There are also some volunteer clinical faculty. The college needs an additional 35 faculty members to handle the 1,450 students registered in regular programs.
>
> The physical plant of the college is now double what it was several years ago and plant operating costs have increased substantially.
>
> The hospital reimburses the college for the administration of the clinical services in hospital departments by full-time faculty members and for certain laboratory work and other services rendered. The college realizes 14 percent of its income from this source. Restrictions imposed upon hospital reimbursable rates by State and Federal regulatory agencies may cut into this income source.

The health sciences library of the college is excellent but it lacks audio-visual equipment and soft ware for the self-learning center which was planned and could be established. Funds for such uses would decrease the deficit of faculty members.

School B

Survival beyond three to five years is absolutely dependent on outside support.

Any notion that the schools could gradually develop the means for internally absorbing the costs of expanded enrollments was simply fallacious.

Plans are underway to seek early retirement of new junior faculty. No new programs will be started. Growing operating deficits will occur, requiring invasion of income-producing capital.

Fifty-five percent of the school's students are receiving scholarship grants averaging $1,800 per year.

Foundations properly see themselves as innovators, trend setters and providers of venture capital; none of them is interested in supporting the continuing costs of operating proven programs.

The school is engaged in a large number of programs for minority students, health services being provided in depressed and disadvantaged communities, affiliations with various social agencies, etc.

School C

The school indicates that it will need an average of $6,000 per student from Federal and State sources for the years through 1978 and more than $8,000 per student from these public sources between 1978 and 1983.

During the 1973-74 fiscal year, 393 students or 64 percent of the total applied for and received

> financial aid totaling $1.5 million. The average grant per student was $3,800. Loans make up 72 percent of these funds and three-quarters of the loan money comes from the New York State system.
>
> The total number of full and part-time faculty has been significantly reduced over the last four years due to retirement and attrition. There is also a moratorium on the replacement of faculty except in specific cases where program objectives would not be met. It is unlikely that this policy can be continued much longer.
>
> The State should assume the responsibility for financing graduate medical education; because of the system of third-party payments to hospitals with residency programs, the existing residencies are becoming more difficult to support.

Obviously, much remains to be done in appraising the needs of and the resources available to medical schools. Unit cost data on undergraduate medical education are one element in such appraisal. Many other elements must be brought in if policy-makers are to develop principles and judgements as to an appropriate sharing of all costs. For the present, the Task Force must confine itself, primarily, again consistent with its charge, to suggesting principles and devices for funding undergraduate medical education.

PRINCIPLES FOR FUNDING MEDICAL EDUCATION

This Task Force report has earlier acknowledged that the financing of higher education including medical education has been, historically, a shared responsibility: the costs being shared by governments, philanthropists, students and institutions. But we have also noted that the shares borne by these participants have emerged randomly out of the necessity for accommodation to realities and that they are not necessarily economically rational nor equitable.

We eschew the debate over private versus social benefits of medical education and medical practice for the simple reason that the arguments apply as well to virtually all educational activity and professional and vocational practice: farmers, lawyers, sanitation engineers, teachers, etc. Medical education, and perhaps all higher education, needs a coordinated and cooperative framework and system for its support. The development and implementation of such a system requires complete and sympathetic understanding by all participants.

The financing of medical education must be placed upon a sound basis with provisions for long-term implementation of formulae and shares of responsibility. Only with such a basis can schools plan constructively and with confidence to achieve the goals expected by the public and by Federal and State governments. Uncertainty over the form, level and continuity of public funding is especially damaging to the fiscal planning and stability of the institutions.

The students and their families should also be enabled to plan their budgets over the full term of the educational program.

Accepting, then, the principle of shared responsibility which has evolved over the years, the Task Force suggests that the participants in the financing of medical education should be (1) the Federal government, (2) the State government, (3) philanthropists and the institutions themselves and (4) students. The problem, as always, is that of determining the relative shares of cost to be borne by these participants. That decision cannot be made by an economic calculus but must be made by the continuing consensus of public and private policy makers. The Task Force suggests that the following principles should apply to that determination.

Federal Government Suppport

Since acceptance of the germ theory, health has been a primary area of national, and world-wide, governmental concern. Medical schools are, indeed, a national and world resource, and medical education and research are crucial to the long-term welfare of society. The Federal government must commit itself to a substantial and permanent subsidy of medical schools.

The primary purpose of Federal aid should be to provide a sound financial foundation for existing medical education institutions.

A secondary purpose of public institutional aid, shared by Federal and State governments, should be to influence the total numbers of medical school graduates.

A third purpose of such aid should be to improve the ultimate geographic and specialty distribution of graduates, but legislative devices to achieve this objective should not be made part of general foundational or operating support. Other incentive devices can be employed for this purpose by both Federal and State governments. The "carrot" of funding, moreover, in size, shape and flavor, should be commensurate with and appropriate to the "stick" of directional devices.

The Federal government should continue to share with the states major responsibility for funding construction of facilities required for expansion of enrollment in existing schools and for new schools deemed necessary for further growth of the number of physicians.

Federal funds for operating purposes should continue to be provided on a capitation basis including payments for students enrolled in all health professions educational programs: medical students, physician's assistants, nurse practitioners and other allied health fields. Only by such a broad-gauged program can the government recognize and accept responsibility for the differing financial requirements of the various schools which arise from the size and diversity of their various educational programs. The Federal financial faucet cannot be turned on and off. If the Federal government finances, for a time, the initiation of new and worthwhile programs such as those for physician's assistants, it must not endanger these programs by cancelling the funding and expecting other participants, states, institutions and students, to pick up the full burden.

The Federal government has long recognized its responsibility for medical research and it must continue to meet that responsibility. The strength and viability of the medical schools depend heavily upon such Federal support and the people of the nation and the world are its ultimate beneficiaries.

State Support

New York State (and other states) should continue to provide unrestricted funds for the basic support of medical education as supplements to Federal support. We have noted that New York State, through three programs, now provides financial aid to medical schools amounting to almost one-third of their educational operating expenditures. The three existing programs might be rationalized into a single program of capitation aid. We have noted that Federal capitation aid is only slightly more than one-half the level of State aid. The Federal share should be increased and the State share maintained by appropriate increases to keep pace with rising costs.

State capitation aid should also be extended to medical schools and other institutions providing high cost special educational programs for physician extenders, requiring intensive clinical education.

As with Federal support, State support is justified and needed in order to (1) insure an adequate number of physicians to provide medical services to the people of the State and (2) to attract additional interns and residents to the State. The evidence is clear that the locale in which physicians take their postgraduate training is an important determinant of their place of continuing residence and practice.

Philanthropy and Institutional Sources of Funds

We recognize that there is great diversity among medical schools in the amount of internal institutional funds available for the support of their educational and other programs and in their success in attracting philanthropic contributions. History, age, performance and prestige obviously determine the size in institutional endowments and the amounts of annual gifts received.

The Task Force recognizes also that institutional endowment funds and gifts received are often restricted to specific uses and are not available for general support. Nonetheless, both these funds and the unrestricted funds have, for the most part, been contributed to institutions to support their educational and research programs. Institutions having such funds should continue to allocate them, in significant proportions, to the support of medical education.

At the same time, public and other funding should not be adjusted in line with differences in institutional resources. Institutional diversity in programs and methods are important. It is also essential that those institutions with larger endowment bases be permitted and encouraged to allocate institutional income and gifts to the maintenance and strengthening of quality, to new programs and to new and promising research endeavors.

The Student Contribution

The fourth participant in the support system is the student, and the Task Force believes that the student should pay a "fair" part of the cost of his medical education. Education in general and higher education, in particular, provides long-term benefits to recipients in terms of both more satisfactory working lives and higher incomes. The physician may reap more psychic and monetary rewards in the long run than does the practitioner in other professional fields. But again, pointed fingers and incessant debates do not solve the problem of financing medical education.

Lawyers and small businessmen, rock musicians and professional athletes also receive high incomes. The graduated Federal and State income tax systems reduce the net differentials between their earnings and those of others. There are other ways to address these issues than to levy excessive charges on the ultimate practitioner during the years in which he is studying for his profession.

At the present time, the student attending an independent medical school pays tuition amounting to one-quarter to one-third of the cost of his education. The student in the public institution now pays considerably less than this proportion. The Task Force suggests that, as adjustments are made in tuition rates, over the years, the total charge to the student not exceed one-third of the cost of his education in independent schools and perhaps an equal or a slightly lesser amount may be appropriate in the public institutions.

If students are to be expected to pay an increased share of the cost of their medical education, additional funds must be available to them through publicly funded scholarships and loans. Such funds are especially important if opportunity for and access to medical education are to be made available to all students regardless of socioeconomic status. A perusal of the records in medical school student financial aid offices will show that more than one-half the students need aid. Moreover, the national commitment and thrust to open the doors of all higher and professional educational institutions to minorities and "disadvantaged" students mandates expansion of publicly funded student aid programs.

The foregoing discussion of financing has covered only the direct support of institutions as such. While it is acknowledged that the student should pay a significant part of the cost of his higher education, it is also recognized that full equality of opportunity mandates compensatory funding based upon ability to pay.

The Federal and State governments have, for some time, participated in the financial support of college and university students including medical students. The Federal funding of authorized scholarship and loan programs for medical students has, as in the case of other Federal programs, fallen far short of the needs of students and of authorized appropriations. The amounts of funds made available to students for both scholarships and loans have meant that the average grant is quite small in relation to tuition charges, and the total number of students who qualify and receive grants is a small percentage of the number applying for aid.

New York provides three sources of State funds to medical students: (1) scholar incentive or tuition assistance grants, (2) Regents' scholarships and (3) guaranteed loans with interest subsidies. The scholar incentive grant levels have not been increased for some years and remain at a maximum of $600 with the maximum available only to the very lowest income students. In fact, a student must be well below the poverty level to qualify for such a grant.

The Regents' scholarships for medicine and dentistry number 100 per year. This means that, at any given time, only 400 students can be holding such scholarships throughout the State. With more than 6,000 students now enrolled in programs leading to the first professional degrees in these professions, the total number of scholarships can cover less than 7 percent of the students. The scholarships are scaled to income with a maximum grant of $1,000 per year for up to four years of study. Thirty percent of these scholarships are now reserved for students of low income who agree, upon completion of their education, to serve in areas of physician shortage. These scholarships provide a maximum of $4,000 per year for four years.

Medical students may also secure loans guaranteed and subsidized by the Higher Education Assistance Corporation (now the Higher Education Services Corporation) up to a maximum of $2,500 per year to a total of $10,000. However, loans taken and outstanding while the student is an undergraduate would be charged against the maximum eligibility for $10,000.

We shall return to this topic of student aid, along with that of institutional aid, in the recommendations to follow.

Financing of Graduate Medical Education

Finally, as last words on the principles which we believe should underly the financing of medical education, we suggest that public subsidies be provided for partial support of graduate medical education, i.e., internship and residency training, especially in those fields leading to primary medical care and, more particularly, for unique programs. Historically, and today, medical schools and teaching hospitals cover the costs of graduate education but the costs are a substantial burden to both and, for the hospitals, often a source of dispute with third-party payers. The latter, in many cases, contest the propriety of charging these costs--and the issue remains very much alive.

We cannot recommend the appropriate roles of the Federal and State governments in such subsidization. However, clearly, both the nation and the individual states have justifiable interests in such a program in terms of long-run public or societal benefits. Geographical and specialty distribution of physicians has been identified as a major problem and it is national in scope. Consequently, we believe that the nation's interest is best served if the Federal government allocates funds for the creation and maintenance of approved residency programs in certain specialty fields and in geographic areas where the general public needs are most apparent and least well supported.

In New York State, the 1974 Legislature appropriated $2.0 million for the support of up to 200 family medicine residencies. The 1975 Legislature continued this support with an appropriation of $1.2 million. We commend the Legislature and the Governor for the initiation of this important support program and we hope that it will be continued and broadened as a supplement to such Federal support as may be forthcoming.

To underscore this point, we quote Fein and Weber:

> "The greatest direct benefit provided to the citizens of the state by public medical schools may be derived from training programs for interns and residents (house staff). Because hospitals affiliated with medical schools are more successful and attract the interns and residents, the valuable services of house staff are more available within states where medical school graduate clinical programs are large. Furthermore, the availability of superior M.D. graduates as interns and residents may help to attract practicing physicians who value their aid in providing efficient, high-quality care."

GENERAL SUMMARY AND CONCLUSIONS*

The following paragraphs represent conclusions reached by the Task Force during its deliberations, as well as summaries of points which the Task Force would like to emphasize.

(1) The twelve existing medical schools in this State are immensely valuable and irreplaceable state, national and world resources which can benefit, both directly and indirectly, the health of all peoples. Consequently, every effort must be made to protect their existence and their integrity and to maintain and improve the quality of their programs.

(2) For the foreseeable future, New York State needs an increase in the total numbers of physicians, and especially needs to expand significantly its output of primary care physicians.

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*See page 219 for Fiscal Conclusions.

(3) The creation of new traditional medical schools would be exceedingly costly and there would be a delay of 12 to 15 years before they would reach full productivity.

(4) In view of the unpredictability of future requirements for physicians, it is necessary to identify the short range (20-year needs) and to fulfill these needs as expeditiously as possible and with the greatest economy consistent with high quality. Attention should be given to programs of inherent flexibility which will also upgrade the quality of medical care in underserved areas.

(5) Where new programs are deemed necessary, new revenue must be found for their support rather than transferred from that which maintains existing institutions and programs.

(6) Every effort should be made to make maximal use of the limited reservoir of potential teaching facilities by upgrading their capabilities to provide educational as well as health care services where they are most needed.

(7) Every effort should be made to facilitate a more equitable geographical distribution of physicians.

(8) The specialty distributions, particularly of future physicians in New York State, should be monitored. Although this, we believe, requires national criteria and programs, developed to ensure that public needs are met by graduate medical education, it is appropriate and desirable for the Regents to monitor graduate medical education in New York State as they do all other graduate programs.

(9) As rapidly as possible, New York State should replace foreign medical graduates with United States medical graduates in hospital training programs. However, places should be available for exceptional persons from abroad, especially those who will return to their own countries after receiving unique specific training in the United States.

(10) The independent medical schools of New York State enroll two-thirds of their students from State residents. This figure is higher than those of California and Illinois, two large states which have a combined total of eight independent schools.

(11) The State University medical schools in New York enroll 92 percent of their students from State residents; only Illinois among the large states enrolls a higher percentage.

(12) New York has more than 650 State residents enrolled in out-of-state medical schools. This is almost twice the number of the next ranking state, New Jersey. In total, there are less than 400 out-of-state students enrolled in New York's public and private medical schools. If all states adopted exclusionary policies, New York would be the loser in that almost 300 of its State residents would not have been admitted to medical school at all in the United States this year.

(13) The location of a medical student's undergraduate education is not an important factor in the place of his ultimate practice. Much more important is the location in which he receives his resident training.

(14) In addition to the increase of 50 percent in the enrollments of the independent medical schools, over the past ten years, the State University schools have increased enrollment by almost 20 percent. The development of the Stony Brook school will add, ultimately, another 100 graduates per year to the State's supply of physicians.

(15) COTRANS and Fifth Pathway students are now being admitted into both public and private medical schools in increasing numbers. During 1975-76, 75 COTRANS students will be enrolled for their clinical education. In addition, a total of 84 Fifth Pathway students are now enrolled completing one year of clinical education. The admission of these transfer students, therefore, means an output of

graduates equivalent to that of an additional medical school.

(16) The contractual arrangement with the University of Vermont medical school will ultimately produce an additional 20 New York State resident graduates per year.

(17) The biomedical education program of the City College of New York will be channeling, in time, almost 100 students per year into the clinical education programs of medical schools. Perhaps half of these students will enroll in New York State schools.

(18) The proposed clinical medical education program in Binghamton, to be administered and operated by the State University, will accommodate between 30 and 40 students per year.

(19) If its program is approved by the Regents, the proposed New York College of Osteopathic Medicine, to be operated as part of the New York Institute of Technology on Long Island, would have an entering class of 36 students

and, eventually, would have a class of 108 students. Hence, by 1985, the State will be adding another 100 physicians per year to the output of the other public and independent institutions.

(20) The Task Force proposes that a brokerage office be established and funded by the State to work with local governmental and other agencies throughout the State in the recruitment and placement of physicians in underserved areas.

(21) Several medical schools have adopted preceptorship programs for medical students in the clinical years of their education. The students work with physicians in remote or otherwise underserved areas. It is hoped that these preceptorships will induce graduates to consider establishing their practices in these underserved areas.

(22) Physician extenders are gradually, but increasingly, being employed by physicians, contributing to increased efficiency of the

physician and enabling him to care for more patients. It is important that educational programs for physicians' assistants be expanded and supported by public funds. Educational programs for nurse clinicians have been initiated in some institutions. The addition of these practitioners to the health care team will also improve the effectiveness of total health care activity. Increased employment of physician extenders and the further adoption of the team approach to care will reduce the anticipated number of additional physicians required to meet health care needs in 1990.

(23) The Federal appropriation bill for health manpower has not been adopted as of this writing. A bill covering health manpower education is also still in the hearing stage. It would continue grants for facilities construction and loan guarantees and interest subsidies for such construction. It also provides for loans to students and expansion of the National Health Service Corps scholarship

program. Capitation grants for schools of medicine would be set at $2,100 per student per year. Financial distress grants and special project grants are continued. Federal legislative proposals in the health and health professions area are broad in detail; the reader is referred to the more extensive summary appearing at pages 143-150 of this report.

(24) In order to correct deficiencies in the availability and quality of needed care in New York State, a wide variety of actions could be taken by the Regents, the Governor and the State Legislature, other State departments and agencies, the State Board for Medicine, the hospitals, the medical schools in the State, professional societies, communities and individual citizens. The Task Force offers its recommendations with the hope that they will provide the beginnings of a multifaceted, State-wide attack on the problems.

GENERAL RECOMMENDATIONS*

The Regents Task Force recommends that the Board of Regents of the University of the State of New York should:

1. Continue to be supportive of the medical schools in order to preserve their existence, their quality and their integrity.

2. Recommend that the funding of medical schools in the future be based on support for multiple components. Medical schools are complex national resources from which we all benefit, and as such deserve both Federal and State financing. The entire institution should receive unrestricted funding to a certain extent. Above and beyond that basic funding, additional monies should be based upon capitation in medical and in allied health programs, and upon the kinds of programs developed or expanded to help meet the goals of the Regents.

3. The Regents and other State officials should urge the Federal government to accept the recommendations of the Institute of Medicine of the National Academy of Sciences (whose cost study it commissioned) and to provide Federal funds to support "capitation grants ranging between 25% and

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*See page 223 for specific fiscal recommendations.

40% of net education expenditures..." to "contribute to the financial stability of public and private health professional schools..."

4. Support worthwhile experimental programs in medical education and urge the Liaison Committee on Medical Education of the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association, the accrediting body for medical schools, to give serious consideration to granting accreditation, at least for a limited period of time, to such institutions or programs.

5. Approve the creation of the equivalent of at least two, and possibly three, clinical medical education programs using institutions presently with teaching hospital capability and potential.

6. Encourage implementation of an arrangement now under consideration between the Champlain Valley-Physicians Hospital Medical Center in Plattsburgh, the State University of New York, and the University of Vermont in order to expand the medical education opportunities and upgrade the quality of services available in that area.[1]

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[1] Became Chapter 576 of Laws of 1975.

7. Adopt as a policy that, as the numbers of United States medical graduates increase, the numbers of students in COTRANS and Fifth Pathway programs will decrease accordingly, to the end that transfer programs will be phased out completely, and as the State no longer needs to rely upon graduates of foreign medical schools to staff its institutions and provide the necessary patient care, licenses to foreign medical graduates will be granted only on exceptional grounds.

8. Exert their influence in the field of graduate medical education, a significant educational area which has so far been permitted to operate in a laissez faire environment, by bringing graduate medical education under the Master Plan procedures. It is recommended, however, that any suggested changes be formulated only after careful consideration of their possible impact upon the financing of residency training.

9. Encourage all of the specialty boards, the American Board of Medical Specialties, the specialty organizations, and any necessary Federal agencies to undertake a study of the needs, present and projected, for each specialty in light of population projections and to provide a rational basis for adjustment in the numbers of positions for training in the various specialties.

10. Require the immediate development of a formal curriculum and compensatory training programs for the education

and training of nurse clinicians/nurse practitioners in primary care, in order to ensure that graduates of all such programs have uniform capabilities, education, and training. Nurses with such education and training should be legally registered to assist in providing primary care under appropriate legislation.

11. Seek both Federal and State monies to support and expand existing programs for the training of physicians' assistants and primary care nurses.

12. Request financial support for, and assist the State Health Department in the development of statewide programs for the training of emergency medical care personnel and for the registration of Emergency Medical Service Technicians under the existing specialist's assistant category of Article 131-A, Section 6531, of the Education Law. These programs are already in Article 30 of the Public Health Law, and additional financial support to the State Health Department is necessary for their implementation.

13. Recommend that an office or agency be established either in the State structure or on contract with an outside agency to provide an efficient, centralized application system for New York residents to New York medical schools.

14. Change the Regents Medical Scholarships so as to make them available to students already accepted for admission to medical school.

15. Advocate the establishment by the State or by contact with an appropriate agency of a "brokerage" office to help communities in medically underserved areas of the State to recruit physicians, to assist physicians to find appropriate practice settings, and to coordinate efforts toward these same goals with the existing agencies presently involved at minimal levels in these functions, such as the State Health Department and the Medical Society of the State of New York.

16. Encourage the development of practice patterns which will attract and retain physicians in underserved areas, and endorse the expansion of special incentives to practice in such areas, such as the forgiveness of educational loans, guaranteed annual incomes, etc.

17. Request the State Board for Medicine to consider the liberalization of endorsement policies for valid, unblemished licenses from other states for physicians desiring to practice medicine in New York.

18. Lend their influence to those agencies which might assist in the adjustment of malpractice insurance coverage in order to encourage physicians to remain in this State to practice full-time or to practice part-time, or to continue to practice after retirement from institutional, corporate, or medical school service.

19. Approve the recommendation of the State Board for Medicine for a minimum of two years of hospital training for both United States medical school graduates and foreign medical school graduates before issuing a license to practice medicine.

20. Request the Legislature to revise Article 131, Section 6526, of the Education Law to require limited permits for all physicians who are involved in any kind of patient care, and who are not holders of unrestricted licenses or who are not enrolled in accredited training programs.

21. Request the Legislature and the Governor of this State to provide financial support for the expansion or development of new residency training programs in primary care in order to yield annually one hundred additional physicians from such training programs.

The Regents Task Force also recommends that the Regents should urge the twelve medical schools in New York State to:

22. Continue to make every effort to expand their enrollments in the first year. An average increase of ten students per school would result eventually in an additional output equivalent to another medical school.

23. Make every effort to expand their enrollments in the clinical division through COTRANS programs, and by granting advanced admissions to candidates who have passed Part I

of the National Board Examinations.

24. Add or expand present Fifth Pathway places by upgrading community hospitals and other potential teaching facilities not used now for instruction of medical students.

25. Add and/or expand their programs in primary care; any expansions in specialized programs should be limited to those specialties involved in the delivery of primary care: internal medicine, pediatrics, family practice and general practice.

26. Institute rigorous campaigns to recruit students into the primary care specialties.

27. Adopt community hospitals and/or other appropriate facilities for medical instruction. (Appropriate fiscal mechanisms must be developed to support any additional costs incidental to the addition of such educational programs.)

28. Be encouraged to develop more physician extender programs for physicians' assistants and primary care nurses.

29. Train medical students and allied health workers during their clinical experiences to function as a team.

30. Improve and expand programs in continuing medical education, with special attempts to include physicians who are not on staffs of hospitals with quality education programs and who do not hold membership in local and state medical societies where continuing medical education programs are readily available.

31. Establish an early admissions program for New York residents to New York medical schools; especially to enable Regents scholars and other scholars to obtain early admission.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS ON FINANCING MEDICAL EDUCATION

The Task Force has identified the major problems attendant to the number and geographic and specialty distribution of physicians, the operations and needs of medical schools, the role and needs of teaching hospitals, the expansion of programs to produce more physicians' assistants, nurse clinicians and allied health personnel, and the needs of medical students. Surprisingly, perhaps, not all of the recommendations required or implied the need for more public, or other funds, for their implementation--but most did!

Summary and Conclusions

In the immediately foregoing chapters, we have described the present state of financing medical education--public and independent institutions and their students. We have found that:

1. The net educational cost of undergraduate medical education, as determined by studies conducted, averaged between $11,000 and $12,000 in 1973-74. For 1975-76, the cost may well be as much as 20% higher.
2. New York State now provides direct financial aid to independent medical schools, through

three programs, of about $3,600 per student per year. This aid amounts to almost one-third of the educational costs per student.

3. Federal direct institutional aid to the State's medical schools has averaged $1,865 per student year, providing about 17 percent of unit costs. Net costs do not differ markedly between public and independent institutions; the slightly nigher costs of the public institutions are attributable to lower income offsets against essential research and patient care associated with teaching.
4. The public institutions receive about 70 percent of their educational operating funds from State appropriations.
5. Federal scholarship and loan programs for students have been funded at low levels and provide less than 20 percent of tuition billings to students in independent institutions. Owing to the lower tuition rates of the public institutions, Federal funds are more helpful but still contribute a small portion of the total financing needs of students.
6. While total Federal and State capital construction grants have been very helpful to the medical schools in expanding enrollment capacity, the

new, additional facilities also account for significant increases in operating costs attributable to operation and maintenance of larger total plants.

7. As a result of State grants of operating funds for enrollment expansion and capital grants for construction, the independent medical schools of the State have expanded total enrollment by almost 50 percent and first-year classes by 56 percent over the past 10 years.

8. Federal capitation grants will drop to 47 percent of authorized levels for 1975-76 to about $1,350 per student year and will, hence, contribute only about 10 percent to coverage of costs. The future of Federal funding, especially that of basic support, is highly uncertain at this time.

9. In the independent medical schools, student tuition covers about 25 percent of educational costs. Institutional funds provide the remaining 25 percent after allowing for Federal and State funding.

10. With Federal aid contributing about 15 percent to the funding of undergraduate education in the State University medical schools, student

tuition covers the remaining 14 or 15 percent.

11. Medical schools and health sciences centers are highly complex institutions with a multiplicity of programs and activities. Educational costs per undergraduate medical student enrolled are only one measure of their commitments and cost figures should not be used in isolation from all other facets of these institutions.

12. The number of medical school graduates can be increased by other methods than that of expanding the size of first-year classes. The higher level of State capitation aid for students in upper-division clinical education has been helpful but additional thrusts are needed to enlarge the clinical teaching capacity of the medical schools and affiliated hospitals.

13. As tuition rates continue to rise, additional scholarship and low-cost loan funds must be made available to students. The Regents scholarships are few in number, highly restricted in respect to the income levels for student eligibility and small in average stipend in relation to tuition rates.

14. If greater influence is to be brought upon geographic and specialty distribution of physicians, public funds must support activities for recruitment of physicians in shortage areas and expansion of internships and residencies in primary medical care fields.

On the basis of these findings and conclusions and those presented in the Interim Report, the Task Force now recommends to the Regents the following proposals for new and additional State financing.

Recommendations on State Financing

1. The present programs of State institutional aid should be maintained. Although we recognize the present limitations on possible expansion, in order to encourage and support further growth of medical school enrollments, we recommend that the sum of $10,000 per student per year be awarded to each independent medical school for increases in first-year enrollments above the level prevailing in the entering class of 1975. An institution will not be eligible for this grant if (a) it has not yet increased enrollment by the maximum of 25 students permitted under existing contracts

and (b) if its first-year class has not yet reached that number which it had set as its enrollment goal prior to 1975 and upon which its State capital construction grant was based.

It is not known how many institutions will be ready, willing and able to expand enrollment and to take advantage of this proposed grant. Given the expansion that has already taken place and the facilities and staffing available, the total enrollment growth in entering classes will not be very great. A total of 100 students would, of course, require an annual outlay of $1 million. Considerably less than this amount would suffice as an appropriation for the first year to meet enrollment increases. The institution would also receive continuing support through each year of a student's education for the additional students enrolled in the entering class.

2. In order to encourage and support the admission of COTRANS, Fifth Pathway and other qualified students in the third and fourth year of educational programs, we recommend that each school be awarded $6,000 for each such student enrolled

as a transfer student in a clinical education year and continuation of that subsidy through each year of the student s enrollment.

7 COTRANS students pay the regular tuition rates, averaging more than $3,000, levied by the independent institutions. The schools will receive $3,000 for each graduating COTRANS student and $2,500 per year in a capitation grant for each of the two years in which the student is enrolled. Hence, an average of $7,000 is available to the institution from student tuition and present State grants. The figure of $6,000 is, therefore, based upon average cost of $13,000 per year per student for 1976-77.

We recommend, further, that the State University medical schools be funded at the level of $10,000 per year for each such clinical year the student is enrolled.

3. There is a great need for and great interest in the development of community hospitals as teaching hospitals. As the medical schools increase the number of students enrolled in the clinical years, the last two years of their education, they will need additional facilities

to provide this clinical education. It is estimated that the cost to a medical school and hospital of developing programs and staffing them will approximate $1 million per year for a period of five years. This figure is based upon providing clinical education for 40 to 50 students in each developed community hospital. We, therefore, recommend that the State appropriate $1 million for 1976-77 and make a commitment to provide such appropriation for each of the four succeeding years.

Assuming that the other measures we have recommended for closing the "physician gap" are adopted and implemented, we estimate that there will remain a "gap" of 120 to 150 graduates per year which must be filled in order to reach the 1985 target of 260 physicians per 100,000 population. Hence, three or four medical school-community hospital programs of this type would be needed. If one is initiated each year, beginning in 1976, the fiscal requirements will rise to a maximum of $4 million per year.

Not every medical school will be able to take on this additional commitment; nor is every community hospital suitable or adaptable for this activity. The variations in degree of adaptability of both the schools and the hospitals, therefore, means that costs will vary. We offer here only an estimate for the typical case.

4. Educational programs for physicians' assistants now number eight in the State and enroll about 350 students. It has been determined that the cost of education for these students, in programs which generally run two years, is about $7,500 per year. The relatively high cost, compared to general undergraduate academic education, is attributable to the affinity of this educational program to that for the medical student. A full year of clinical education is required with close contact between the physician assistant student and physicians and other health personnel.

The Task Force recommends that the State subsidize these programs by providing one-half the cost of education. This share of $3,700 per year per student would require $1.3 million per year of State appropriation.

In addition, we recommend that the sum of $300,000 be made available as special Regents scholarship aid for qualifying students in these programs. Thus, an appropriation of $1.6 million is recommended for the State's 1976-77 fiscal year.

5. We recommend that the Regents medical scholarships be increased in number and level of stipend and that the income levels for eligibility be markedly increased in recognition of the inflation of recent years and that the income level for student eligibility be set at least at the federally defined poverty level.

   We recommend, further, that these scholarships be allocated to the medical schools of the State to assure that every scholarship recipient has been admitted to and enrolled in a State school and to enable the medical school financial aid officer to prepare equitable financial aid packages for the scholarship winners as well as all other students in need.

6. The Task Force supports the Regents legislative proposal that the Higher Education Services Corporation guarantee loans for medical students up to $5,000 per year with a maximum loan eligibility of $20,000.

We have noted that Federal scholarships and loans are both limited and uncertain as to continuity. So long as the State's lending agency can meet this need, the role of the Federal government in providing interest subsidies may be sufficient. The higher level of State lending is especially important to those students who have had to borrow funds to meet part of their costs of education as undergraduates. At the same time, the Task Force reiterates its position that the Federal government should have an important role in providing financial assistance to students in the health professions. Both State and Federal governments should continue to examine alternative ways in which the student can repay loans after beginning full time practice.

7. We recommend that the State contract with an external agency such as the Medical Society of the State of New York or the Associated Medical Schools to establish a brokerage service for the recruitment and placement of physicians in medically underserved areas of the State. Such a service agency could make an important contribution to a high public purpose and one which

is needed to address the problem of geographic distribution of physicians.

The service can be provided at a very low cost. We recommend that the State appropriate $75,000 per year for the operation of such a brokerage service.

8. While the net educational expenditures of the State University medical schools are slightly higher than those of the independent schools, their direct instructional cost and the total educational cost are considerably less than those of the independent schools. The inability of the State University schools to establish appropriate incentive systems that would enhance the recovery of research and patient care expenses is a significant factor in their overall allocation of resources.

   Therefore, the Task Force recommends that the State University schools develop improved incentive type systems that would increase their ability to recover research and patient care expenses and that these recovered funds be retained by the schools for reallocation to direct instructional efforts.

PROGRAM COST STUDY

for the

ASSOCIATED MEDICAL SCHOOLS OF NEW YORK AND NEW JERSEY

FINAL REPORT

June, 1975

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PREFACE

A study of program costs in health science centers is more than a routine cost accounting task. The complexity and joint production nature of these multi-purpose health, education and biomedical research centers makes the determination of program costs difficult and subject to many significant assumptions and allocation rules. By relying upon the basic allocation rules developed by the Institute of Medicine/National Academy of Sciences study, we hope to bring consistency and comparability for this study and nationally published findings. However, the methodology applied yields merely historical average costs -- thus the report presents what is rather than what should be.

Finally, the study staff would like to recognize and thank the major efforts by numerous individuals at the eight private schools. Without their diligence and assistance this study would not have been possible.

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TABLE OF CONTENTS

PREFACE i

TABLE OF CONTENTS ii

CHAPTER 1 -- INTRODUCTION 1

- °Study Scope 2
- °Study Objectives 2
- °Study Approach 2
- °Key Assumptions and Constraints 2

CHAPTER 2 -- SUMMARY OF FINDINGS 3

- °Total Costs 6
- °Program Costs 8
- °Instruction Costs Per Student 11
- °Education Costs and Net Education Expenditures Per Medical Student 17
- °Faculty Activity Analysis 18

CHAPTER 3 - PROGRAM COST ALLOCATION STUDY PROCEDURES AND METHODOLOGY 22

CHAPTER 1

INTRODUCTION

STUDY SCOPE

This report presents the findings of the program cost analyses conducted at the eight private medical schools in New York:

- Columbia University-College of Physicians and Surgeons
- New York University School of Medicine
- Cornell University Medical College
- New York Medical College
- Mount Sinai School of Medicine of City University of New York
- School of Medicine and Dentistry, University of Rochester
- Albany Medical College
- Albert Einstein College of Medicine of Yeshiva University

Program cost analyses undertaken at these institutions are based on the methodology developed by the Institute of Medicine (IOM) in its recently published study on the costs of health professional education.[1] The scope of the study is limited to the analysis of costs incurred by the educational units at the above eight health sciences centers. The operations of University and affiliated hospitals, which are important contributors to the education of medical students, house officers, graduate students as well as other students, are not included in the analysis. However there is one exception: faculty salaries paid through these hospitals are included in total costs.

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[1] Costs of Education in the Professions, Institute of Medicine, National Academy of Sciences, Washington, D.C., January 1974.

STUDY OBJECTIVES

The primary objective of the study is to determine the full resource costs of the three major programs of Instruction, Research, and Patient Care at the private medical schools in New York. Instruction program costs are further broken down into the major student categories: medical students, house officers, graduate students and other instruction programs. The data provided by the study will be very useful to the schools in communicating their funding requirements to the State and Federal governments; in addition, these data will be useful to the schools in assigning the economics of their various programs.

STUDY APPROACH

The methodology used in this study parallels that developed by the Institute of Medicine in its study of education costs in the health professions. The procedures and judgments developed in the IOM study were applied on a uniform basis at each private medical school included in this study to produce and display averages comparable to those of the private schools in the IOM study. The IOM figures used for comparison in this report have been adjusted upward by 10 percent to reflect inflationary increases between FY1973 costs reported in the IOM study and the FY1974 data used for the New York schools.

KEY ASSUMPTIONS AND CONSTRAINTS

Program cost allocation is not an exact science; it requires judgments by experienced and knowledgeable individuals at the health sciences centers to reflect each institution's characteristics, environment and programs in selecting appropriate allocation criteria. The selection of allocation criteria is the very essence of program cost determination since a large proportion of a health sciences center's expenditures are "joint" in nature, i.e., they contribute to more than one program output and must, therefore, be "allocated" among the benefitting programs on a consistent and rational basis.

The program costs and other analyses contained in this report should not be construed as normative standards, nor do they necessarily reflect program quality. Rather, they describe the resources available to each health sciences center. They categorize the use of these resources in producing the outputs or programs of the center.

CHAPTER 2

SUMMARY OF FINDINGS

Today's medical schools are large multimillion dollar institutions that operate in a complex environment. They channel funds from diverse sources such as their endowment, tuition and fees, federal and private research and training grants, and patient services revenues into producing their three major program outputs of instruction, research and patient services. These outputs are to a great extent highly interrelated and are often produced simultaneously by the same activities and facilities: for example, when a clinical faculty member implants an experimental pacemaker in a patient in the presence of house officers and medical students, he is simultaneously caring for the patient, contributing to research and providing clinical training for both medical students and house officers. Moreover, for most medical schools the education of health professionals is but one of several missions. Major commitments to biomedical research and patient service in themselves constitute major institutional objectives.

Because of the joint nature of medical school outputs the determination of the costs of the various programs is difficult and at times controversial. Estimates of these costs cannot be easily computed from traditional accounting systems; special analyses must be undertaken in order to determine how to attribute total costs to the medical school's instruction, research and patient care programs.

The methodology developed by the IOM in its 1973 study provided a means for computing program costs. In order to permit comparability with the published IOM results and other studies using this method, we applied the IOM approach to the private medical schools in New York State in order to:

°determine the average program costs for research, patient care and the instruction of medical students, house officers, and graduate and post-doctoral students.

- °develop average education costs and net education expenditures for medical students at the private schools in New York; and,
- °compare the averages of the New York schools with those of the private schools in the IOM sample.

This chapter summarizes the study's findings for seven of the eight private medical schools in New York state. While a full-scale study was conducted at Mt. Sinai, its data have been omitted from this statewide summary because its medical student program is still in a developmental phase, thus distorting its results, particularly on a per student basis. In summary the study showed that:

- °the eight private medical schools in New York are large multimillion dollar institutions, with total FY1976 costs of approximately $385 million;
- °the seven fully operational private medical schools in New York had over 3,500 medical students and over 3,350 house officers during FY1974;
- °approximately one-third of total costs were incurred for instruction of various types of students. Medical student and house officer instruction each accounted for 11 percent of total costs; and the instruction of graduate and other students amounted to another 11 percent of total costs;
- °instruction costs per student were roughly 16 percent higher at the New York schools than the private schools in the IOM sample; they averaged $10,600 per medical student at the New York schools, compared with an average of $9,100 per student at the private schools in the IOM sample;
- °net education expenditures averaged $11,100 per medical student at the New York schools, which is within 5 percent of average instruction costs; net education expenditures per student averaged $10,900 at the IOM private schools;
- °instruction costs averaged $12,600 per house officer and $12,400 per graduate student at the New York schools.

In this summary, data for the New York medical schools are presented in the form of the average and range for the seven fully operational schools. Comparative data from the IOM national study show averages and ranges for the eight private medical schools increased by 10 percent to make the IOM 1972-73 data comparable with the 1973-74 data used in this study.

Since an objective of this study was to determine the full resource costs of the school's programs, total costs include not only expenditures incurred by the school, but also certain other costs that benefit the school's programs but are incurred by other parties: for example, faculty salaries paid by an affiliated hospital, and the cost of services rendered by the parent university. Moreover, for purposes of consistency and comparable valuation, the cost of faculty time was computed by allocating the full amount of faculty compensation (including private practice earnings) to the various activities. Thus, the school's "costs" (as distinguished from expenditures) includes patient and third party payments for patient service.

Finally, costs also include an imputed value for annual depreciation of fixed assets.

The study results are presented in four parts as follows:

- °total costs broken down into functional cost components (e.g., faculty, non-faculty salaries, library, administration);
- °program costs showing the allocation of total costs to the major programs of research, patient care and instruction of medical students, house officers, graduate students and all other students;
- °analyses of instruction costs for medical students, house officers and graduate students by major elements of costs;
- °analysis of education costs and net education expenditures per medical student at the New York private schools compared with averages for the private medical schools in the IOM sample; and,
- °the highlights of the faculty activity analysis at the New York schools and the private medical schools in the IOM sample.

TOTAL COSTS

Total costs for FY1974 at the seven fully operational private medical schools in New York amounted to approximately $345 million or an average of $49.3 million. As shown in Table 2-1, faculty costs averaging $14.9 million accounted for 30 percent of the total; non-faculty staff salaries were almost as much as faculty salaries, averaging $14.4 million; and departmental direct costs other than salaries averaged $11.7 million per school. Departmental direct costs, the sum of these three items, account for 83 percent of total costs.

General administration and institutional expenses of $3.4 million were the largest single component of average indirect costs of $8.3 million; plant operations and maintenance expenses of $2.5 million represent only 5 percent of total costs. Private schools tend to have lower indirect costs than public schools largely because they generally do not require several levels of administration to deal with State agencies and legislatures.

TABLE 2-1

AVERAGE COST BY MAJOR ELEMENT AT THE SEVEN[1/] PRIVATE MEDICAL SCHOOLS IN NEW YORK

1973-74

(in $000)

	Amount	Percent
DIRECT COSTS		
Faculty costs	$14,887	30%
Non-faculty salaries	14,388	29
Other direct costs	11,668	24
Sub-total Direct Costs	$40,943	83%
INDIRECT COSTS		
General administrative	$ 3,415	7%
Library	461	1
Plant operations and maintenance	2,502	5
Other indirect costs	819	2
Depreciation costs	1,123	2
Sub-total Indirect Costs	$ 8,320	17%
TOTAL	$49,263	100%

1/Excluding Mt. Sinai, whose education programs are in a development phase.

PROGRAM COSTS

Total costs at each school were allocated to the three major programs of instruction, research and patient care. Average total costs of $49.3 million at the New York private schools were roughly equally divided among these three major programs. The detailed display of program costs by major cost element is shown in Table 2-2. Of particular interest is the considerable support costs for technical staff, equipment and supplies required to operate biomedical research programs.

Table 2-3 displays the composition of instruction costs of $16.2 million by the major student categories. The instruction of medical students is the largest single instruction program, averaging $5.4 million, and accounting for 33 percent of instruction costs and 11 percent of total costs.

The study data show that the instruction of house officers is a highly prominant program at the New York private schools, averaging $5.5 million, which is slightly higher than the cost of medical student instruction. House officer instruction accounts for 11 percent of total costs among New York private schools. Graduate and post-doctoral student instruction averaged $1.9 million, accounting for 4 percent of total costs; various other instruction programs including continuing education and allied health students amounted to $3.3 million, representing 7 percent of total costs and 21 percent of instruction program costs.

TABLE 2-2

MAJOR ELEMENTS OF AVERAGE PROGRAM COSTS AT THE SEVEN[1] PRIVATE MEDICAL SCHOOLS IN NEW YORK

(in $000)

	Total	Percent	Instruction	Research	Patient Care
ELEMENTS OF COSTS					
Faculty Costs	$14,887	30%	$ 6,301	$ 3,554	$ 5,032
Non-faculty Salaries	14,388	29	3,168	5,227	5,993
Other Direct Costs	11,668	24	3,254	5,278	3,136
Sub-total Direct Costs	$40,943	83%	$12,723	$14,059	$14,161
Indirect Costs	$ 8,320	17%	$ 3,451	$ 3,344	$ 1,525
TOTAL COSTS	$49,263	100%	$16,174	$17,403	$15,686
PERCENT	100%		33%	35%	32%

1/Excluding Mt. Sinai, whose education programs are in a development phase.

TABLE 2-3

AVERAGE INSTRUCTION PROGRAM COSTS AT THE SEVEN[1] PRIVATE SCHOOLS IN NEW YORK

1973-74

(in $000)

	Amount	Percent of Total Instruction Costs	Percent of Total Costs
Medical Students	$ 5,396	33%	11%
House Officers	5,537	34	11
Graduate and Post-Doctoral	1,893	12	4
Other Instruction	3,348	21	7
TOTAL INSTRUCTION	$16,174	100%	33%

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

INSTRUCTION COSTS PER STUDENT

Total instruction costs were divided by the number of FTE students to compute costs per student at each school. Table 2-4 displays the average and range in instruction costs per FTE students at the private schools in New York. Instruction costs per medical student ranged from $7,100 to $14,600, and averaged $10,600.

The spread was greater in instruction costs per house officer, ranging roughly from $7,000 to $18,600 with an average of $12,600. Instruction costs per graduate student averaged $12,400 ranging from $6,400 to $19,600.

These costs include principally the institutional costs of the medical school for instructing these health professionals. They do not include the various educational costs borne directly by teaching hospitals, except for faculty salaries paid by affiliated hospitals. The exclusion of non-faculty hospital costs probably has little effect on the cost of medical students instruction; however, since house officer instruction is conducted almost entirely in the hospital, their costs are significantly understated by this exclusion.

Table 2-5 shows the breakdown of instruction costs per medical student into the major cost elements. Faculty costs constitute the largest single cost element averaging $4,200 per student. The range in faculty costs per student is fairly small, from $3,400 to $5,700 per student. The range in other cost categories is significant, and in some instances reflects different accounting practices at the various schools. Comparative averages are also shown for the private schools from the IOM sample, after adjusting these figures upward by 10 percent to account for inflationary increases between 1973 and 1974. Faculty costs per student were slightly lower at the New York schools but non-faculty direct costs averaged 12 percent higher than the IOM private schools; and indirect costs per student averaged 58 percent higher than the IOM private schools.

The breakdown of instruction cost per FTE house officer is displayed in Table 2-6. Faculty costs per house officer average $6,200, representing almost 50 percent of instruction costs as compared with 40 percent for medical students. The ranges in costs per house officer are substantial for every major cost element, reflecting the wide variety of training programs and resource utilization.

TABLE 2-4

SUMMARY OF INSTRUCTION COSTS PER FTE STUDENT AT THE SEVEN[1] PRIVATE MEDICAL SCHOOLS IN NEW YORK

1973-74

	Average Number of FTE Students	Average Cost Per FTE Student[1]	Range
Medical Student	509	$10,620	$7,058 - $14,629
House Officer	440	12,615	6,950 - 18,573
Graduate and Post-Doctoral	161	12,399	6,356 - 19,616

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

TABLE 2-5

ELEMENTS OF AVERAGE INSTRUCTION COSTS PER MEDICAL STUDENT AT THE SEVEN[1] PRIVATE MEDICAL SCHOOLS IN NEW YORK

1973-74

	NEW YORK PRIVATE SCHOOLS			IOM PRIVATE SCHOOLS[2]		
	Average	Percent	Range	Average	Percent	Range
ELEMENTS OF COSTS						
Faculty Costs	$ 4,192	39%	$3,387 - $ 5,661	$4,098	45%	$1,760 - $ 4,950
Non-Faculty Salaries	1,764	17	477 - 4,176	3,245	36	1,320 - 5,500
Other Direct Costs	1,900	18	817 - 4,924			
Total Direct Costs	$ 7,856	74%	$4,681 - $12,810	$7,343	81%	
Indirect Costs	$ 2,765	26%	$1,819 - $ 4,401	$1,746	19%	$1,320 - $ 2,200
INSTRUCTION COSTS	$10,621	100%	$7,058 - $14,629	$9,089	100%	$4,510 - $12,100

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

[2] IOM costs have been increased by 10 percent for inflation to make the IOM averages comparable with FY1974 costs for the New York schools.

TABLE 2-6

ELEMENTS OF AVERAGE INSTRUCTION COSTS PER HOUSE OFFICER AT THE SEVEN[1] PRIVATE MEDICAL SCHOOLS IN NEW YORK

1973-74

	Average	Percent	Range
ELEMENTS OF COST			
Faculty Costs	$ 6,187	49%	$3,261 - $10,407
Non-Faculty Salaries	2,063	16	599 - 4,271
Other Direct Costs	2,280	18	857 - 4,041
Total Direct Costs	$10,529	83%	$5,787 - $14,109
Indirect Costs	$ 2,085	17%	$ 592 - $ 4,509
INSTRUCTION COSTS	$12,614	100%	$7,111 - $18,573

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

Table 2-7 displays the breakdown of costs by major element for graduate students. The study data shows a wide variation in per student costs for each cost element, reflecting the diversity of graduate education and the differences in these programs at the various schools. Faculty costs are the dominant costs accounting for $4,400 of total costs of about $12,500 per student, a lower proportion of instruction costs than for medical students or house officers. The close relationship between instruction of graduate students and research is reflected in the higher proportion of non-faculty direct costs.

TABLE 2-7

ELEMENTS OF AVERAGE INSTRUCTION COSTS PER GRADUATE AND POST-DOCTORAL STUDENT AT THE SEVEN[1] PRIVATE SCHOOLS IN NEW YORK

1973-74

	Average	Percent	Range
ELEMENTS OF COSTS			
Faculty Costs	$ 4,367	35%	$2,569 - $ 8,433
Non-Faculty Salaries	2,252	18	716 - 4,279
Other Direct Costs	2,610	21	597 - 5,635
Total Direct Costs	$ 9,229	74%	$3,928 - $14,598
Indirect Costs	$ 3,169	26%	1,425 - 5,777
INSTRUCTION COSTS	$12,398	100%	$6,356 - $19,616

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

EDUCATION COSTS AND NET EDUCATION EXPENDITURES PER MEDICAL STUDENT

Instruction costs represent the costs of direct student-related activities of a medical school. The Institute of Medicine concluded that instruction costs alone do not represent the full cost of providing medical education. Specifically, it affirmed that the full cost of an educational program must include instruction costs plus the costs of research and patient care activities that are essential to education that is without which a medical school cannot conduct the education of modern health professionals. While there appears to be little disagreement regarding this concept of education costs, the determination of how much research and patient care are essential to the education program requires the application of professional judgment. Since the IOM study was chartered to compute education costs only for first degree health professionals, the IOM secured judgments from medical educators and administrators for computing essential research and patient care activities for the medical student instruction only, not for house officer or graduate students. Therefore, in the absence of similar judgments on education of non-M.D. students such as graduate students and house staff, we are currently able to compute full education costs only for medical students until such time as comparable judgments can be secured for other types of students.

Although education costs contain the full economic costs of educating medical students, the IOM study recognized that their utility was not appropriate for use in financing decisions because education costs include research and patient care activity costs, portions of which may be already funded by their respective purchasers. Therefore the IOM study defined and computed net education expenditures by deducting that portion of research and patient care activity costs included in education costs and already funded by research or patient care purchasers.

The averages and ranges of instruction costs, education costs and net education expenditures per medical student at the New York private schools are summarized in Table 2-8. Comparative figures are also shown for the private schools in the IOM sample. As Table 2-8 shows, average instruction and education costs per student are higher in the New York private schools than the IOM private schools average, while average net education expenditures per medical student are almost the same for the private schools in New York and those in the IOM sample. Moreover, net education expenditures are only 5 percent higher than instruction costs per student at the private schools in New York.

Thus, among the New York private schools who have succeeded in recovering revenue on large proportions of their research and patient care costs, instruction cost is a reasonably close proxy for net education expenditures. Since we do not have the required judgments to compute education costs and net education expenditures for house officers and graduate students, instruction costs are particularly useful since they are available for house officers and graduate students as well as medical students.

FACULTY ACTIVITY ANALYSIS

The cost allocation methodology developed by the IOM study and applied to the New York private schools is based on an analysis of faculty activities for a selected representative week. We conducted an activity analysis at each private medical school in New York during a week in Fall 1974. Table 2-9 shows the average workweek for a full-time faculty member in the basic sciences and clinical departments. Comparative figures are also shown for the average faculty member in the IOM study which reported activity data for a week in Spring 1973. Although the average workweeks are roughly the same for the New York schools and the IOM private schools, the New York faculty member spends on average more time in direct instruction research and patient services activities and correspondingly less time in general overhead activities.

Finally, Table 2-10 displays the distribution of time to programs for the average faculty member at the private schools in New York as well as his counterpart in the IOM study. The data shows the strong emphasis of the New York schools on house officer and graduate education programs; it also shows that the average faculty member in the New York schools spends a greater portion of time on patient care activities.

TABLE 2-8

AVERAGE INSTRUCTION COSTS, EDUCATION COSTS AND NET EDUCATION EXPENDITURES PER MEDICAL STUDENT AT THE SEVEN[1] PRIVATE SCHOOLS IN NEW YORK

1973-74

	NEW YORK SCHOOLS		IOM PRIVATE SCHOOLS[2]	
	Average	Range	Average	Range
Instruction Costs	$10,621	$ 7,058 - $14,629	$ 9,089	$4,510 - $12,100
Education Costs	16,171	11,105 - 23,036	15,208	7,920 - 20,515
Net Education Expenditures	11,126	8,681 - 12,475	10,883	5,665 - 15,565

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[1] Excluding Mt. Sinai, whose education programs are in a development stage.

[2] IOM costs have been increased by 10 percent for inflation to make the IOM averages comparable with FY1974 costs for the New York schools.

TABLE 2-9

DISTRIBUTION OF AVERAGE FACULTY TIME IN WEEKLY HOURS BY ACTIVITY AT THE SEVEN[1] PRIVATE MEDICAL SCHOOLS IN NEW YORK

FALL 1974

	NEW YORK SCHOOLS		IOM AVERAGE	
	Basic Sciences	Clinical Sciences	Basic Sciences	Clinical Sciences
Teaching Activities				
°Teaching	4	3	5	4
°Preparation for Teaching	8	3	8	4
°Curricular	2	1	3	2
Joint Activities				
°Teaching and Patient Care	2	10	1	11
°Teaching and Research	3	1	4	1
Research Activities				
°Independent Research	16	7	16	7
°Research Administration	3	1		
Patient Care Activities				
°Patient Care	1	8	-	6
°Hospital/Clinic Administration	1	2	-	2
General Support Activities				
°Administration	3	4	6	6
°Service	1	2	3	3
°Professional Development	5	6	5	5
°Writing	2	2	2	1
TOTAL	51	50	53	52

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[1] Excluding Mt. Sinai, whose education programs are in a development phase.

TABLE 2-10

AVERAGE DISTRIBUTION OF FACULTY TIME BY PROGRAM AT THE SEVEN[1] PRIVATE SCHOOLS IN NEW YORK

FALL 1974

	New York Schools	IOM Private Schools Average
INSTRUCTION		
°Medical Students	15%	17%
°House Officers	16	23
°Graduate and Postdoctoral	5	
°Other Students	8	—
Total Instruction	44%	40%
RESEARCH	24%	31%
PATIENT CARE	32%	29
TOTAL	100%	100%

1/Excluding Mt. Sinai, whose education programs are in a development stage.

CHAPTER 3

PROGRAM COST ALLOCATION STUDY
PROCEDURES AND METHODOLOGY

The operating environment of a modern health professional school is very complex, with competing demands on the School's resources for various objectives, such as educating different categories of health manpower, conducting biomedical research, and providing quality health services to the community served. The analysis of expenditures of these institutions is complicated by the fact that only a small portion of their activities are directed exclusively at a single objective or function. A majority of their activities simultaneously benefit more than one program; therefore the determination of the total cost of each program requires allocation of common or joint activities to the programs they benefit. For example, a faculty member conducting a ward round with medical students and residents is simultaneously providing instruction as well as patient care.

This chapter presents the major features of the study methodology as developed by the Institute of Medicine (IOM), and used in the study of the private medical schools in New York. Detailed description of the methodology and findings of the IOM study are reported in the Institute's published report[1/] and are, therefore, not repeated here. The major steps involved in the methodology can be summarized as:

1. Develop Program Costs for Instruction, Research and Patient Care Programs.
    a. Allocation of Faculty Costs:
        °Conduct a faculty activity analysis for a specified sample week
        °Determine total faculty costs from all sources, i.e., school funds, sponsored research and training, New York City contracts, and estimated private practice earnings of geographically full-time faculty.

[1/] "Report of a Study: Costs of Education in the Health Professions", National Academy of Sciences, Washington, D.C., January 1974.

°Assign faculty activities to programs by using appropriate allocation rules for:

- -- direct program activities, such as research or teaching
- -- joint activities, such as clinical teaching, or teaching jointly with research
- -- general support activities, such as professional development, or writing
- -- allocate faculty costs to programs based on the assignment of faculty activities to programs

b. Allocation of Non-Faculty Costs:

°Direct departmental costs

°Indirect support costs, including allocated portions of relevant campus overhead and central campus costs.

2. Develop education costs and net education expenditures for first degree students:

a. Compute amounts of research and patient care essential to education.

b. Compute the income offsets for essential research and patient care.

These steps are discussed in detail below, highlighting where appropriate special issues with respect to the private schools in New York.

1. Develop Program Costs for Instruction, Research and Patient Care Programs

The first step in the methodology is to allocate the institution's total costs among the three major programs of instruction, research, and patient care. The principal objective of this methodology is to develop the full resource costs for each institution and its major programs. Therefore all expenditures incurred by the School as well as those incurred by parent institutions, such as the central campus, that directly or indirectly support the School's programs are included in its total resource costs. However, there is one exception: only faculty salary costs incurred by affiliated hospitals are included in the study; other expenditures of owned and affiliated hospitals are not included. This treatment for the New York schools is consistent with the IOM study.

The IOM study addressed program costs in eight health professions. The IOM study group defined programs to which costs could reasonably be allocated for each profession based on the characteristics of the schools in the profession:

°For schools of medicine and osteopathy, costs were allocated to the three programs of instruction, research and patient care since the institutional goals of these schools included independent outputs for each of these programs; research and patient care activities are undertaken in these institutions for their own mission and often the size of these programs have little bearing on the education programs.

°In schools of dentistry, optometry, pharmacy, podiatry, nursing and veterinary medicine, however, costs were allocated only to the instruction and research programs. Patient care provided at schools in these professions is generally part of the education program in school owned clinics, and is often provided by students under faculty supervision. These clinics would cease to exist if the education program did not exist, unlike the teaching hospital which would probably continue to function even if the education program did not exist. Therefore it was decided in the IOM study to allocate costs only among instruction and patient care in these professions.

The study as undertaken at the New York schools followed the same methodology and procedures that were used by the IOM.

The major steps involved in developing program costs at each health professional school are summarized below:

1.a Allocation of Faculty Costs: The program cost allocation methodology is based on an analysis of faculty activities during a specified sampling period of one week. The sampling period was selected after consulting with the respective school to ensure that no untoward bias would exist in the data provided by faculty. The principal criteria for selecting the week is that the major educational programs are in full operation and that no significant external events necessitate large sections of the faculty to be away from the school. We recognize that probably no single week or any other timeframe is completely representative of an individual faculty member's activities for the entire year, and if that were our objective it would be very poorly met by sampling a specified week. Our objective, however, is to obtain a measure of the amount and distribution of faculty time in the various activities for the school as a whole. Although there are variations in the amount and distribution of time spent by individual faculty members on various activities, the aggregate amount of resources used and their program distribution for the entire school are reasonably consistent among semesters.[1] Moreover, in comparisons between the schools, the same bias, if any, is introduced by sampling during the same time period.

Activity data was collected for a representative sample week in the Fall of 1974 at each private medical school in New York. Faculty activities were categorized into fourteen standard activities used in the IOM study. These activities fall into three broad groups:

- °Activities that relate exclusively to a single program, such as teaching, and independent research.
- °Activities that benefit more than one program, such as clinical teaching, and joint research and teaching.
- °General support activities that support all the school's programs, such as professional development, and professional writing.

Each standard activity category is assigned or allocated between the programs of instruction, research, and patient care as illustrated in Table 3-1:

- °Direct program related activities are assigned to their respective programs; instructional activities are further broken down by type of programs, such as the instruction of medical students, house officers, fellows, dental students, etc., based on the number of students of each type that are present during an instructional activity. Faculty time in preparation and curriculum development activities is assigned according to the type of student benefiting from that activity as indicated by the responding faculty member.

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[1] The IOM study reported that average instruction costs per student were unaffected in a subsample of medical schools where faculty activity analyses were conducted for the Spring and Fall semesters.

- Joint activities that simultaneously benefit two programs are allocated to the respective programs using the same criteria as the IOM study:
  - -- The portion of joint research and teaching time applicable to first degree students is allocated to instruction, the balance to research.
  - -- The IOM study developed factors based on marginal analysis to determine the incremental teaching time involved in joint teaching and patient care activities. These departmental factors displayed in Table 3-2 are used in this study to allocate joint teaching and patient care time among the two programs.
- °The general support activities of faculty members are allocated among all programs depending on their direct involvement in each program.

The above allocation procedure is used at all New York private schools in order to provide each school with useful activity data for its own internal management use. The activities allocated to the patient care group are then added back into the instruction programs for schools of dentistry, nursing and in order to produce instruction costs comparable to the published IOM data.

The final step with respect to the allocation of faculty costs is to determine total faculty costs and allocate them to programs based on the program assignment of faculty activities described above. The methodology calls for the determination of total faculty compensation from all sources for geographically full-time faculty, including their private practice earnings. Each full-time faculty member is considered as a resource entity to the Medical School and his or her total earnings are allocated to programs according total activities reported for the sample week. This procedure stems from a basic study assumption that the resource cost of a faculty hour in instructional activities is the same as that in research or patient care activities. This key assumption seeks to separate the cost basis from current financing practices which may assign a different value to various activities.

At some of the private schools, we were able to obtain total faculty costs without any difficulty since these schools had comprehensive faculty practice plans and total faculty earnings were known by the school or its affiliated hospital. At other schools, however, where clinical faculty are permitted to collect and retain their income from private practice, we estimated their total earnings using annual average faculty earnings data published by the American Association of Medical Colleges (AAMC)[1]. Faculty earnings reported at the 80th percentile for the Northeastern region were used as best estimates of total earnings; the faculty's earnings from known sources at the school (such as grants, general funds, etc.) were deducted from the estimated total earnings to obtain estimated private practice earnings.

To summarize, the steps involved in allocating faculty costs to program are:

°Collect data on faculty activities for a selected week;

°Group faculty activities into standard activity categories;

°Assign activities to programs;

°Determine total faculty costs from all sources, and

°Allocate total faculty costs to programs based on the allocation of faculty activities.

The above steps are followed for each faculty member and the data are then summarized for each department, for groups of basic sciences and clinical departments, and for the entire school.

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[1] Medical School Faculty Salary Study 1973-74, May 1974, AAMC.

1.b Allocation of Non-Faculty Costs: Non-faculty costs comprise direct departmental expenditures on technical and support staff salaries, supplies and equipment, as well as indirect expenditures such as general administrative and general institutional expenses, library costs and student services expenditures. These costs were broken down into the standard cost categories used in the IOM study and allocated to programs on a consistent basis. These costs constitute a very large portion of the total expenditures of each school, therefore special care was exercised to ensure that their determination and allocation to programs reflect the operating environment at each school and also produce comparable results. Judgments are undoubtedly required in allocating these costs to programs and we worked closely with each school to determine the appropriate allocation criteria. Non-faculty direct costs included in the study consist of departmental expenditures from school funds and sponsored research and training funds. Indirect expenditures include various components of these costs borne by the school, as well as allocated portions of general administrative and supporting services costs borne by the parent university, where applicable. Employee benefit costs for direct salary expenditures are included in direct costs and those pertaining to administrative and other indirect salary expenditures are included in indirect costs.

Thus, the first major output of this study is the development of program costs for the instruction, research and patient care programs at each health professional school. Instruction program costs are further broken down for each student type, e.g., medical students, house officers, graduate students and other students.

2. Develop Education Costs and Net Education Expenditures for First Degree Students

Since the Institute of Medicine was charged by Congress with developing national average education costs per first degree student in the health professions, the IOM study concentrated on this one program. The Institute stated that although instruction costs constitute an important part of education, there are additional costs in the form of independent research and patient care that a health professional school must incur in order to have a quality education program for first degree students. There appears to be little disagreement with the concept that education costs involve more than instruction; however, the critical issue of how much research and patient care activities are essential to the education of first degree students is a matter of judgment. The Institute secured judgments on these issues from a panel of educators and administrators in medicine, dentistry, and veterinary medicine, respectively, in its "constructed costs" process. These judgments shown in Table 3-3 were then used to compute amounts of essential research and patient care for the education of first degree students.

The IOM study further stated that although education costs represent the full cost of resources required to educate first degree students, they include portions of research and patient care costs already financed by these respective sources. The study therefore developed net education expenditures by deducting from education costs the cost of essential research and patient care activities already funded from external sources. Net education expenditures indicate the funding required from educational sources for a school to continue its program. We used the same methodology to compute net education expenditures for the first degree program at all the New York health professional schools.

Table 3-4 illustrates how the income offset is computed for the patient care program; the same procedure is used to compute income offset for research. Total patient care costs are broken down into "pure" or independent patient care activities, and joint teaching and patient care. A portion of the costs of these joint activities is included in patient care and the balance is in instruction costs. Where we compute education costs for medical students, the portion of joint teaching and patient care included in patient care is termed patient care essential to education.

The revenues from patient care are first applied to the "pure" patient care costs. The excess, if any, is then applied to the portion of joint teaching and patient care costs included in patient care; if the excess is not sufficient to cover the full amount of joint costs included in patient care, it is apportioned among the various student categories. If revenues exceed the total patient care costs, the excess is applied to the portion of joint costs included in instruction; once again, if revenues do not cover the entire amount, they are prorated among the student categories, as shown in the Table. It is worth-noting that the total amount of income offset never exceeds the total cost of joint activity's costs for medical students, even if revenues exceed total patient care costs.

TABLE 3-1

STANDARD ACTIVITY CATEGORIES AND
THEIR ASSIGNMENT TO PROGRAMS

	Programs		
	Instruction	Research	Patient Care
Direct Program Activities			
1. Teaching (direct student contact)	X		
2. Preparation for teaching	X		
3. Curricular activities	X		
4. Instruction related administration	X		
5. Independent research		X	
6. Research administration		X	
7. Independent patient care			X
8. Hospital/clinic administration			X
Joint Activities			
9. Joint teaching and research	X	X	
10. Joint teaching and patient care	X		X
General Support Activities			
11. Professional development	X	X	X
12. Professional writing	X	X	X
13. Service to the profession or community	X	X	X
14. Absence	X	X	X

TABLE 3-2

ALLOCATION OF JOINT TEACHING AND PATIENT CARE ACTIVITIES TO PROGRAMS

	PERCENT OF JOINT ACTIVITY TIME ALLOCATED TO	
Profession	Instruction	Patient Care
Medicine - Department of:		
• Anesthesiology	20%	80%
• General Medicine (including other medical specialties)	50	50
• Obstetrics/Gynecology	60	40
• Pathology	50	50
• Pediatrics	45	55
• Psychiatry	40	60
• Radiology	40	60
• Surgery (including surgical specialties)	40	60
• Basic Sciences	100	0
Dentistry, Nursing, Pharmacy, Optometry, Veterinary Medicine, Health Related Professions, Social Welfare, and Health Education	100%	0%

TABLE 3-3

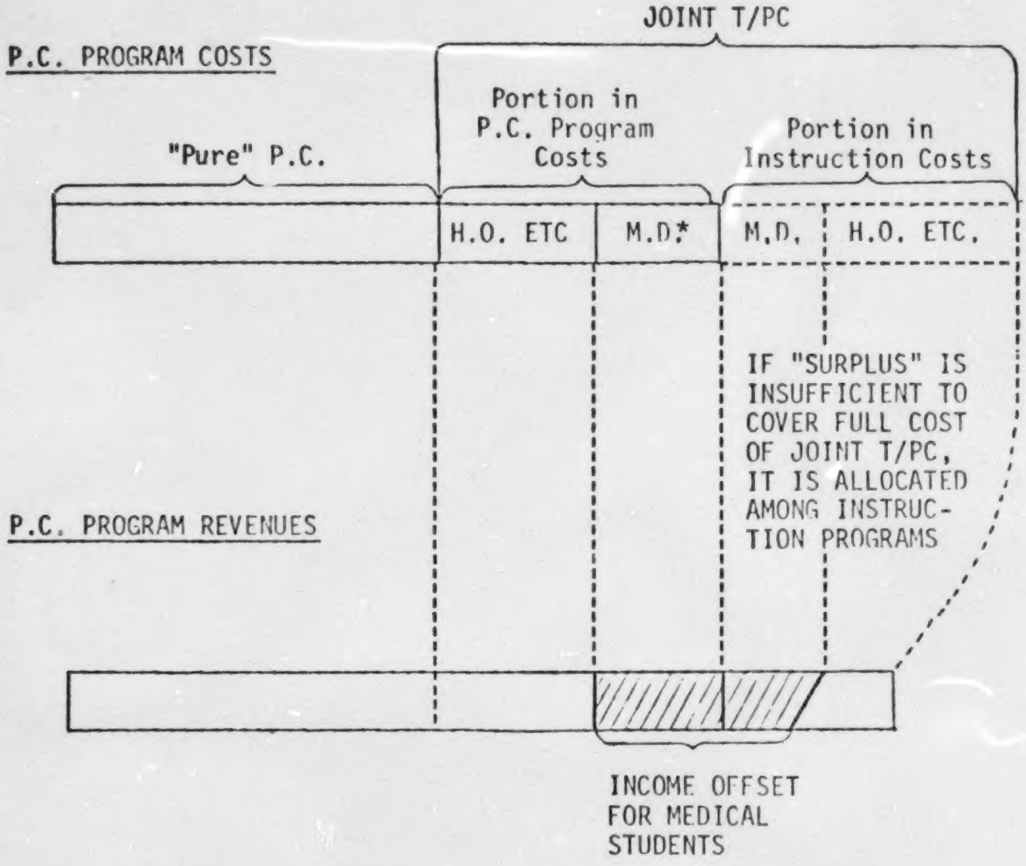
FACULTY RESEARCH AND PATIENT CARE ACTIVITIES CONSIDERED ESSENTIAL TO EDUCATION

Profession	Independent Research	Patient Care
Medicine and Osteopathy	Basic sciences: up to 67% of faculty instruction costs. Clinical sciences: up to 30% of faculty instruction costs.	Balance of joint teaching and patient care not already included in instruction.
Dentistry	Basic sciences: up to 67% of faculty instruction costs. Clinical sciences: up to 20% of faculty instruction costs.	None--all clinical teaching costs already included in instruction.
Veterinary Medicine	Basic sciences: up to 25% of faculty instruction costs. Clinical sciences: up to 10% of faculty instruction costs.	None--all clinical teaching costs already included in instruction.
Optometry, Pharmacy, Podiatry, and Nursing	No maximum: all research expenditures included in education.	Intramural faculty patient care--all clinical teaching costs already included in instruction.

Note: The amount included in education costs in no case exceeds the actual amounts of research and patient care available in each department.

TABLE 3-4

THE PRIVATE MEDICAL SCHOOLS OF NEW YORK
ILLUSTRATION OF THE INCOME OFFSET CONCEPT FOR THE PATIENT CARE PROGRAM


JOINT T/PC
P.C. PROGRAM COSTS
"Pure" P.C.
Portion in P.C. Program Costs
Portion in Instruction Costs
H.O. ETC
M.D.*
M.D.
H.O. ETC.
IF "SURPLUS" IS INSUFFICIENT TO COVER FULL COST OF JOINT T/PC, IT IS ALLOCATED AMONG INSTRUCTION PROGRAMS
P.C. PROGRAM REVENUES
INCOME OFFSET FOR MEDICAL STUDENTS

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*This portion is termed patient care essential to education when computing education costs.

APPENDIX B

PROGRAM COST STUDY

for the

SIX HEALTH SCIENCE CENTERS

FINAL REPORT

1975

Prepared by

Lewin and Associates, Inc.
Washington, D.C. 20024

American Management Systems, Inc.
Arlington, Virginia 22209

Because the Program Cost Study for the six SUNY Health Science Centers encompassed more than the cost study of just the four medical schools and because data, therefore, were so intermixed for each campus, the chapters reproduced in Appendix II contain information not related to the costs of medical education.

Furthermore, since the methodology for this study was identical to that for the study for the Associated Medical Schools, that chapter has not been duplicated for this appendix.

CHAPTER 1

INTRODUCTION TO THE SUNY COST STUDY

STUDY SCOPE

This report presents the results of the program cost study undertaken at the six SUNY health science centers:

- Downstate Medical Center at Brooklyn
- Upstate Medical Center at Syracuse
- SUNY at Buffalo Medical Center
- SUNY at Stony Brook Health Sciences Center
- State College of Optometry and
- New York State Veterinary College

The study of these six centers included the eighteen individual health professional schools as well as Central University at Syracuse and Buffalo. However, the operations of the University and affiliated hospitals, important and significant contributors of medical and other health professions education, were not included in the study, except for the directly paid salaries of the Health Science Center faculty. Further efforts beyond the scope of this study are required to fully capture the role and contribution of teaching hospitals in health professions education.

STUDY OBJECTIVES

The principal objective of the study was to analyze the total costs at each center and allocate these costs among the three major health science center programs or outputs -- Instruction, Research and Patient Care. Total instruction costs were further allocated to student instruction programs, such as M.D. students, graduate students, house officers, and continuing education; these costs were then divided by the number of FTE students to determine annual instruction costs per student.

STUDY APPROACH

The SUNY cost study applied the basic cost finding approach developed by the Institute of Medicine (IOM) of the National Academy of Sciences in its study of education costs in the health professions.[1]

The methodology used in the SUNY Cost Study closely parallels that used in the national study conducted by IOM, to enable comparisons between education costs at SUNY schools with published IOM averages and ranges. IOM cost figures in this report are adjusted to reflect inflationary increases since the IOM national averages are based on FY 1973 data and SUNY Cost Study data are for FY 1974.

1/ Costs of Education in the Health Professions, National Academy of Sciences, Washington, D.C., January 1974.

The IOM study was mandated by Congress in the Comprehensive Health Manpower Act of 1971, and requested the Institute to conduct studies to:

a. Determine the national average annual education cost per student for the first professional degree in schools of medicine, osteopathy, dentistry, optometry, pharmacy, podiatry, veterinary medicine and nursing;

b. Explain the key factors affecting variations in education costs per student in each discipline;

c. Describe national uniform standards for determining annual education costs per student in future years, and

d. Recommend ways in which the Federal Government can utilize cost per student data in providing capitation grants to these schools.

The data supplied by the Institute is currently being used to determine the nature and extent of the Federal role in financing first degree education in the health professions.

STUDY APPLICATIONS

This report sets forth the costs of health professional education by type of student. It also includes comparisons of education costs per student between the SUNY schools and the published IOM data. The specific findings from this study should serve to assist the SUNY system and the State to:

- analyze the total financing requirements of the health professional schools
- determine the costs of conducting the instruction, research and patient care programs at each center, and
- develop improved budgetary management over financing and expenditures.

KEY ASSUMPTIONS AND CONSTRAINTS

Program cost allocation is not an exact science; it requires judgments by experienced and knowledgeable individuals at the health science centers to reflect each institution's characteristics, environment and programs in selecting appropriate allocation criteria. The selection of allocation criteria is the very essence of program cost determination since a large proportion of a health science center's expenditures are "joint" in nature, i.e., they contribute to more than one program output and must, therefore, be "allocated" among the benefitting programs on a consistent and rational basis.

The program costs and other analyses contained in this report should not be construed as normative standards, nor do they necessarily reflect program quality. Rather, they describe the resources available to each health science center. They categorize the use of these resources in producing the outputs or programs of the center.

CHAPTER 2

SUMMARY OF FINDINGS

Because of the complexities of health science centers and the interrelationship among their outputs, namely instruction, research and patient care, determining the costs of health professions education is difficult and at times controversial. Estimates of these costs cannot be easily computed from traditional accounting systems because of the joint nature of outputs. Thus, the SUNY Central Administration requested special program cost studies at the six SUNY health science centers with the following objectives:

- to determine the cost of the three major programs of instruction, research and patient care at each center;
- to develop instruction costs, education costs and net education expenditures for first degree students in the health professions at SUNY schools by applying the methodology and assumptions developed in the national cost study published by the Institute of Medicine (IOM) of the National Academy of Sciences, and,
- to compare costs per student at SUNY schools with published IOM national averages.

PROGRAM COSTS

The six SUNY health science centers account for over 20 percent of the University's total expenditures and comprise major resources for health professional education in the state. Total costs of these centers are over $125 million annually.

Table 2-1 summarizes the total costs for the six SUNY health science centers included in the study, and shows the allocated program costs at each center.

Instruction is the dominant program and constitutes 54 percent (or $68 million) of total costs: 50 percent at Downstate and Upstate; 60 percent at Buffalo; 75 percent at Stony Brook and the State College of Optometry; and 30 percent at the Veterinary College. Research activities constitute 20 to 30 percent of total costs at the four medical centers, ranging from 20 percent at

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Stony Brook to about 30 percent at Buffalo. Research accounts for about 45 percent of total costs at the Veterinary College. Downstate has the largest patient care cost of $12 million representing 30 percent of its total costs. The Veterinary College also has substantial patient care and extension costs of $2.8 million covering roughly 25 percent of its total costs. The strong clinical emphasis at these two centers is reflected in their relatively high patient care costs at Downstate principally through its New York City contracts, and at the Veterinary College through its hospitals and service contracts.

TABLE 2-1

PROGRAM COSTS BY CAMPUS - 1973-74

(IN $ MILLIONS)

	TOTAL COSTS	COSTS BY PROGRAM		
		Instruction	Research	Patient Care
° Downstate Medical Center	$ 39.0	$18.5	$ 8.7	$11.8
° Upstate Medical Center	21.4	11.6	5.3	4.5
° SUNY at Buffalo Health Sciences	39.2	23.6	11.5	4.1
° SUNY at Stony Brook Health Sciences	12.8	9.5	2.6	0.7
° State College of Optometry	1.5	1.1	0.2	0.2
° New York State Veterinary College	11.1	3.3	5.0	2.8
°° TOTAL	$125.0	$67.6	$33.3	$24.1
°° % OF TOTAL BY PROGRAM		(54%)	(27%)	(19%)

Costs of the instruction program are further broken down by type of student. Table 2-2 displays the various instruction program costs for the SUNY health science centers.

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TABLE 2-2

SUNY COST STUDY

INSTRUCTIONAL PROGRAM COSTS 1973-74

(in $000)

	TOTAL INSTRUCTION ($)	M.D. STUD. ($)	HOUSE STAFF ($)	DENTAL STUD. ($)	NURSE STUD. ($)	PHARM. STUD. ($)	OPT. STUD. ($)	VET. MED. STUD. ($)	ALLIED HEALTH STUD. ($)	GRAD. POST-DOC. STUD. ($)	CONT. EDUC. ($)	OTHER STUD. ($)
DOWNSTATE	18,479	7,742	5,454	-	896	-	-	-	1,515	2,205	37	630
UPSTATE	11,612	4,707	2,613	-	719	-	-	-	1,355	1,921	297	-
BUFFALO	23.622	4,070	2,452	4,181	1,941	1.024	-	-	1,416	5,385		3.153
STONY BROOK	9,471	1.520	387	1,312	1,486	-	-	-	1,555	1,723	270	1,218
COLLEGE OF OPTOMETRY	1,084	-	51	-	-	-	862	-	-	84	-	87
VETERINARY MEDICINE	3,330	-	183	-	-	-	-	2,249	-	540	-	358

COSTS PER FIRST DEGREE STUDENT

In order to compare costs of educating health professionals at the SUNY schools with published IOM averages, we computed instruction costs, education costs and net education expenditures per first degree student at SUNY schools using the methodology and procedures developed in the IOM study.

Because of significant differences in the environment and operation of public and private schools all comparisons in this report are between SUNY schools and IOM figures for public schools in the IOM Sample. We do not have the breakdown between public and private schools for dentistry and nursing; in such instances and in other cases where IOM data could not be disaggregated, we have indicated that the comparisons are with overall IOM figures. Moreover, recomputed IOM figures in this report exclude SUNY at Buffalo in order to provide a clear comparison between SUNY and other public schools in each profession; finally the IOM figures are adjusted to reflect inflationary increases since IOM costs are based on FY 1973 data while SUNY data reported here are for FY 1974.

Instruction Costs: Instruction costs are defined as the costs of activities undertaken by a school primarily for the education of students; they include student related activities such as lectures, seminars, counseling, portions of research and patient care activities conducted in an educational setting in the presence of students, and allocated portions of administration and general support services that benefit all the school's programs. The program cost allocation methodology, based on an analysis of faculty activities for a representative sample week, is used to determine instruction costs for various types of students.

The average and range of instruction costs per first degree student at public and private schools in the IOM study are displayed in Table 2.3.

Table 2-4 summarizes instruction costs per first degree student for SUNY schools and also shows adjusted average and ranges for public schools in the IOM study. IOM data was adjusted to exclude the effects of SUNY at Buffalo since out objective is to show comparisons between SUNY and other schools; we also adjusted IOM figures using an estimated inflation factor of 10 percent to adjust

TABLE 2-3

INSTRUCTION COSTS PER STUDENT AT THE PUBLIC AND PRIVATE SCHOOLS IN THE IOM SAMPLE

PROFESSION	IOM PUBLIC SCHOOLS[1/]		IOM PRIVATE SCHOOLS[1/]		TOTAL SAMPLE[1/]	
	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)
MEDICINE	8,162	5,940 - 10,010	9,089	4,510 - 12,100	8,745	4,510 - 12,100
DENTISTRY[4/]	-	-	-	-	8,258	6,327 - 15,618
NURSING[2/] [4/]	-	-	-	-	2,688	1,312 - 4,453
PHARMACY	3,081	1,753 - 4,291	1,984	1,627 - 2,637	2,702	1,627 - 4,291
OPTOMETRY	5,086	4,924 - 5,248	4,115	4,113 - 4,116	4,600	4,113 - 5,248
VETERINARY MEDICINE	6,641	5,983 - 7,746	10,315[3/]	-	7,375	5,983 - 10,315

[1/] IOM figures are increased by 10 percent to reflect inflationayr increases between FY 1973 and 1974.

[2/] Costs per student equivalent.

[3/] Only 1 private school in sample.

[4/] Public and private schools not differentiated in the IOM study.

REVISED 6/20/75

TABLE 2-4

SUNY COST STUDY

SUMMARY OF INSTRUCTION COSTS PER FIRST DEGREE STUDENT - 1973-74

($ Per FTE Student)

PROFESSION	SUNY SCHOOLS DOWNSTATE ($)	UPSTATE ($)	BUFFALO ($)	STONY BROOK ($)	STATE COLLEGE OF OPTOMETRY ($)	NEW YORK STATE VETERINARY COLLEGE ($)	ADJUSTED IOM PUBLIC SCHOOL AVERAGE 1/ ($)	ADJUSTED IOM PUBLIC SCHOOL RANG ($)
* MEDICINE	8,992	9,726	7,826	17,887			8,162	5,940 - 10,010
* DENTISTRY			11,981	65,086			8,258 2/	6,327 - 15,618 2/
* NURSING								
-- PER STUDENT EQUIVALENT	6,639		2,692	5,993			2,688 2/	1,312 - 4,453 2/
-- PER FTE STUDENT	7,345	4,251	9,288	5,289				
* PHARMACY			5,691				3,081	1,753 - 4,291
* OPTOMETRY					11,524 4/		5,086	4,924 - 5,248
* VETERINARY MEDICINE						12,932 4/	7,375 3/	5,983 - 10,315
* HEALTH RELATED PROFESSIONS	5,189	4,764	6,130	11,189				
* SOCIAL WELFARE				6,845				
* HEALTH EDUCATION			4,360					

1/ IOM figures are recomputed after excluding SUNY at Buffalo, and adjusted upwards by 10 percent for inflation to make them more comparable with SUNY cost study figures for FY1973-74.

2/ Overall IOM figures used since public and private schools are not differentiated in the IOM sample.

3/ Overall IOM figures used since there was only one private school in the IOM sample.

4/ Instruction costs per student for the State College of Optometry and the New York State Veterinary College include clinic/patient care costs, according to the IOM methodology; they would be $9,579 per optometry student; and $8,926 per veterinary student without clinic/patient care costs.

for the difference between FY 1973 costs used in the IOM study and FY 1974 costs of the SUNY study. The Stony Brook health science center is in the development stage; therefore its costs are displayed for completeness only and should not be included in any comparative analysis.

The study data show that medical student instruction costs for SUNY schools (excluding Stony Brook) average $8,850, about 18 percent higher than the IOM public schools average. Moreover, costs per student are fairly close at the three SUNY schools. Instruction costs per student for dentistry and ph[illegible] students are higher at Buffalo than adjusted IOM averages; they are also [illegible] the high end of the range in the IOM sample. SUNY's Optometry and Veterinary Colleges are unique in their respective professions, hence their costs per student are significantly higher than the adjusted IOM average. Moreover, the State College of Optometry is also in the development stage and would be expected to have higher costs per student.

In attempting to compute costs per student for nursing, the IOM realized that there were large variations in the way that each nursing school calculated and reported its full-time equivalent students. Therefore, the IOM study developed the concept of "nursing student equivalent" which is computed by dividing total credit-hours (or semester-hours) given by the school by the number of credit hours taken by a "typical" full-time nursing student. We computed costs per nursing student equivalent for the SUNY schools in order to display comparable numbers for SUNY and IOM samples; however, SUNY has a uniform method for computing FTE nursing students, hence costs per FTE student are more meaningful to the schools as well as to SUNY Central Administration.

Education Costs: The IOM study recognized that although instruction activities form the nucleus for educating first degree students, education involves more than instruction; certain research and patient care activities must be conducted for the school to have an education program. These research and patient care activities are therefore essential to education and their costs must be included in education costs. There is general agreement on this issue; however the determination of how much research and patient care are essential to education is a matter of judgment. The IOM secured these quantitative judgments by conducting "constructed costs" seminars for educators and administrators in Medicine, Dentistry and Veterinary Medicine. We used these same quantitative judgments at SUNY schools to compute education costs for first degree students.

The average and range of education costs per first degree student at public and private schools in the IOM study are displayed in Table 2-5.

Table 2-6 shows education costs per student at the SUNY schools and the public schools in the IOM sample. Education costs per medical student averaged $13,000 for the SUNY schools (excluding Stony Brook) which is roughly equal to the public school average in the IOM sample. Education costs per student for dental and pharmacy students at SUNY were significantly higher than the IOM averages, as were those for Optometry and Veterinary Medicine.

Net Education Expenditures: Although education costs show the full resource costs required for education, they have limitations for financing purposes because they include costs of research and patient care activities that may have already been reimbursed by their respective purchasers. Because of this, the IOM study developed the concept of net education expenditures, which deducts from education costs the reimbursed portion of essential reserach and patient care activities. Thus net education expenditures, though not a resource cost in the strict economic sense, indicates the net cost that must be funded from educational and general support sources if a school is to finance its education program.

Net education expenditures per student at the public and private schools in the IOM sample are displayed in Table 2.7.

Table 2.8 shows net education expenditures per student at SUNY schools and the public schools in the IOM sample. Net education expenditures for medical students at SUNY schools (excluding Stony Brook) averaged $12,150 which is roughly 17 percent higher than the IOM public schools average of $10,400 and about $100 per student higher than the most costly public school in the IOM sample. Net education expenditures per student at SUNY are higher than the

TABLE 2-5

EDUCATION COSTS PER STUDENT AT PUBLIC AND PRIVATE SCHOOLS IN THE IOM SAMPLE

PROFESSION	IOM PUBLIC SCHOOLS[1] AVERAGE ($/STUDENT)	IOM PUBLIC SCHOOLS[1] RANGE ($/STUDENT)	IOM PRIVATE SCHOOLS[1] AVERAGE ($/STUDENT)	IOM PRIVATE SCHOOLS[1] RANGE ($/STUDENT)	TOTAL SAMPLE[1] AVERAGE ($/STUDENT)	TOTAL SAMPLE[1] RANGE ($/STUDENT)
MEDICINE	13,189	10,560 - 15,510	15,208	7,920 - 20,515	14,410	7,920 - 20,515
DENTISTRY[4]	-	-	-	-	9,167	6,745 - 15,618
NURSING[2] [4]	-	-	-	-	2,688	1,312 - 4,453
PHARMACY	4,236	2,023 - 6,320	2,436	1,737 - 2,895	3,685	1,737 - 6,320
OPTOMETRY	5,498	5,167 - 5,828	4,164	4,115 - 4,214	4,831	4,115 - 5,828
VETERINARY MEDICINE	7,421	6,664 - 8,935	11,674[3]	-	8,272	6,664 - 11,674

---

[1] IOM figures are increased by 10% to reflect inflationary increases between FY 1973 and 1974.

[2] Costs per student equivalent.

[3] Only 1 private school in sample.

[4] Public and private schools [illegible] the IOM study.

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TABLE 2-6

SUNY COST STUDY

SUMMARY OF EDUCATION COSTS PER FIRST DEGREE STUDENT - 1973-74

($ Per Student)

	SUNY SCHOOLS							
PROFESSION	DOWNSTATE ($)	UPSTATE ($)	BUFFALO ($)	STONY BROOK ($)	STATE COLLEGE OF OPTOMETRY ($)	NEW YORK STATE VETERNINARY COLLEGE ($)	ADJUSTED IOM PUBLIC SCHOOL AVERAGE[3] ($)	ADJUSTED IOM PUBLIC SCHOOL RANGE[3] ($)
• MEDICINE	13,545	14,750	10,794	26,995			13,189	10,560 - 15,510
• DENTISTRY			14,737	79,469			9,167[1]	6,745 - 15,618[1]
• NURSING								
-- PER STUDENT EQUIVALENT	6,802		2,818	6,243			2,688[1]	1,312 - 4,453[1]
-- PER FTE STUDENT	7,526		9,805	5,510				
• PHARMACY			7,909				4,236	2,023 - 6,320
• OPTOMETRY					12,992		5,498	5,167 - 5,828
• VETERINARY MEDICINE						14,332	8,272 [4]	6,664 - 11,674
• HEALTH RELATED PROFESSIONS	5,791	4,715[2]	6,706	11,987				
• SOCIAL WELFARE				7,694				
• HEALTH EDUCATION			4,547					

[1] Overall IOM figures used because public and private schools are not differentiated in the IOM sample.

[2] Includes Nursing Students; excludes students in Nuclear Medicine and Extracorporeal Technology because they are new programs.

[3] IOM figures are recomputed after excluding SUNY at Buffalo, and adjusted upwards by 10 percent for inflation to make them more comparable with SUNY cost study figures for FY 1973 - 74.

[4] Overall IOM figures used since there was only one private school in the IOM sample.

TABLE 2-7

NET EDUCATION EXPENDITURES PER STUDENT AT THE PUBLIC AND PRIVATE SCHOOLS IN THE IOM STUDY

	NET EDUCATION EXPENDITURES PER STUDENT					
	IOM PUBLIC SCHOOLS[1]		IOM PRIVATE SCHOOLS[1]		TOTAL SAMPLE[1]	
PROFESSION	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)	AVERAGE ($/STUDENT)	RANGE ($/STUDENT)
MEDICINE	10,384	8,635 - 12,045	10,883	5,665 - 15,565	10,670	5,665 - 15,565
DENTISTRY[4]	-	-	-	-	7,410	5,559 - 14,737
NURSING[2] [4]	-	-	-	-	2,639	1,312 - 4,453
PHARMACY	3,545	1,905 - 5,301	2,235	1,737 - 2,666	3,235	1,737 - 5,301
OPTOMERTY	3.974	3,873 - 4,076	3,227	2,817 - 3,638	3,601	2,817 - 4,076
VETERINARY MEDICINE	5,481	4,740 - 6,655	8,536[3]	-	6,092	4,740 - 8,536

---

[1] IOM figures are increased by 10 percent for inflation between FY 1973 and 1974.

[2] Costs per student equivalent.

[3] Only 1 private school in sample.

[4] Public and private schools are not differentiated in the IOM study.

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TABLE 2-8

SUNY COST STUDY

SUMMARY OF NET EDUCATION EXPENDITURES PER FIRST DEGREE STUDENT - 1973 - 74

($ Per Student)

	SUNY SCHOOLS							
PROFESSION	DOWNSTATE ($)	UPSTATE ($)	BUFFALO ($)	STONY BROOK ($)	STATE COLLEGE OF OPTOMETRY ($)	NEW YORK STATE VETERINARY COLLEGE ($)	ADJUSTED IOM PUBLIC SCHOOL AVERAGE ($)	ADJUSTED IOM PUBLIC SCHOOL ($)
• MEDICINE	12,079	14,210	10,198	26,995			10,384	8,635 - 12,04
• DENTISTRY			13,817	79,032			7,410[4]	5,559 - 14,73
• NURSING								
-- PER STUDENT EQUIVALENT	6,802		2,815	6,117			2,639[4]	1,312 - 4,45
-- PER FTE STUDENT	7,526		9,785	5,399				
• PHARMACY			7,443				3,545	1,905 - 5,30
• OPTOMETRY					12,403		3,974	3,873 - 4,07
• VETERINARY MEDICINE						12,604	6.092[5]	4,740 - 8,53
• HEALTH RELATED PROFESSIONS	5,708	4,489[2]	6,503	11,821				
• SOCIAL WELFARE				7,323				
• HEALTH EDUCATION			4,547					

---

[1] Costs per student equivalent.

[2] Includes Nursing Students; excludes students in Nuclear Medicine and Extracorporeal Technology because they are new programs.

[3] IOM figures are recomputed after excluding SUNY at Buffalo, and adjusted upwards by 10 percent for inflation to make them more comparable with SUNY cost study figures for FY 1973-74.

[4] Overall IOM figures used when public and private schools are not differentiated in the IOM sample.

[5] Overall 107 figures used since there was only one private school in the IOM sample.

IOM average because SUNY medical schools, like many public schools, do not generate large income offsets for their educationally essential research and patient care programs.

Net education expenditures per student are significantly higher at SUNY than the IOM public school averages for dentistry, pharmacy, optometry and veterinary medicine.

SPECIAL ANALYSIS - SCHOOLS OF MEDICINE

The four medical schools constitute approximately two-thirds of total costs of $126.3 million at the six SUNY health science centers. This section presents the major findings of the SUNY cost study at the four medical schools. Similar analyses for the other professions are contained in the chapters for their respective campuses.

Faculty Activity Analysis: The program cost allocation methodology developed by the Institute of Medicine in its national study and used in this study is based importantly on a full analysis of faculty activities. Moreover, information on the distribution of faculty time is useful for other purposes especially if the analysis is undertaken periodically using the same procedures.

The primary purpose for analyzing faculty activity data for this study was to provide a basis for allocating faculty costs to programs. We collected this information at all SUNY medical schools for a representative week in Spring and Fall 1974. The sample week was selected after discussions with the school to ensure that the data would reflect a reasonable distribution of activities for the school as a whole. The methodology calls for sampling activities during an actual week; however the study was started too late in the Spring and large groups of students had left the campus or completed their formal instruction. Therefore it was decided by SUNY Central Administration to request the faculty to provide similar information for a past week on a retrospective basis. The Fall activity sample collected data for an actual week. Because of the problems with accurately recalling activities for a past week in the Spring sample, it was decided to compute program costs based on the Fall 1974 activity sample at all SUNY medical schools.

Table 2-9 displays how the average faculty member in the basic science and clinical disciplines spends his time in the thirteen standard activity categories used in the study. Our data show that medical school faculty have a workweek ranging from 51 to 57 hours at the SUNY schools, slightly higher than the IOM average of 52.

On a program basis, SUNY faculty average a higher percent of time in instruction than the national average, with medical student instruction accounting for a major portion of the difference, as shown in Table 2-10. Downstate shows the highest percentage of time in patient care activities, reflecting its strong clinical emphasis; it also shows higher proportions of faculty time in medical student instruction, reflecting its large enrollment.

Instruction Costs Per Student: The first step in the study process was to determine the cost of instructing first degree students. Table 2-11 shows the major elements of instruction costs per student for each SUNY school and the adjusted IOM average and range in costs. Stony Brook cannot be compared meaningfully with other SUNY schools or national averages because it is a developing school and does not have fully stabilized programs.

Faculty costs per student at the SUNY schools (excluding Stony Brook) average 4 percent below the IOM public schools average; and total direct costs per student average $6,000 at the three SUNY schools, which is also 4 percent below the IOM public schools. SUNY schools, however, tend to have significantly higher indirect costs per student averaging $2,850 per student, which is $550 per student higher than the most costly public school in the IOM study. It is not unusual for State University systems to have higher indirect costs than private freestanding schools principally because of more administrative levels. For example Stony Brook has supportive and administrative personnel at each health professional school, health science center, and campus; Central Administration in Albany also supports the Schools' programs and provides various services. The more complex these relationships the greater the cost to the system, and SUNY being one of the largest systems for higher education in the country has a large indirect cost component.

TABLE 2-9

SUNY FACULTY ACTIVITY ANALYSIS

AVERAGE FULL TIME FACULTY PROFILE - FALL 1974

SCHOOLS OF MEDICINE AND BASIC HEALTH SCIENCES

(Average Weekly Hours)

	SUNY SCHOOLS									
	DOWNSTATE		UPSTATE		BUFFALO		STONY BROOK		IOM AVERAGE	
	BASIC SCIENCES	CLINICAL SCIENCES 1/	BASIC SCIENCES	CLINICAL SCIENCES	BASIC SCIENCES	CLINICAL SCIENCES	BASIC SCIENCES	CLINICAL SCIENCES	BASIC SCIENCES	CLINICAL SCIENCES
TOTAL	53	55	56	51	53	50	57	53	53	62
TEACHING ACTIVITIES										
• Teaching	6	5	5	2	0	4	6	4	5	4
• Preparation	11	6	11	4	12	5	14	7	8	4
• Curriculum Development	1	2	3	2	3	2	2	4	3	2
JOINT ACTIVITIES										
• Teaching and Patient Care	3	12	4	13	0	10	0	5	1	11
• Teaching and Research	1	1	2	1	3	1	3	0	4	1
RESEARCH ACTIVITIES										
• Independent Research	16	7	12	5	13	5	13	4	16	7
• Research Administration	2	1	4	2	2	1	3	2		
PATIENT CARE ACTIVITIES										
• Patient Care	2	6	2	6	0	4	1	4	0	6
• Hospital/Clinic Administration	1	1	1	1	0	2	0	3	0	2
GENERAL SUPPORT ACTIVITIES										
• Administration	4	6	4	5	5	7	6	8	6	6
• Service	1	2	3	3	2	3	3	5	3	3
• Professional Development	4	5	4	6	3	5	5	4	5	5
• Writing	1	1	1	1	2	1	1	3	2	1

1/ Excluding Service Faculty.

-307-

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TABLE 2-10
FACULTY ACTIVITY ANALYSIS
PERCENT DISTRIBUTION OF FACULTY TIME TO PROGRAMS - FALL 1974
SCHOOLS OF MEDICINE

	SUNY SCHOOLS				IOM AVERAGE
PROGRAMS	Down-state	Up-state	Buffalo	Stony Brook 1/	
TOT. INSTRUCTION	53%	58%	60%	59%	46%
• Medical Students	27	26	19	25	18%
• House Officers	15	18	12	11	28%
• All Other	11	14	29	23	
RESEARCH	27	19	25	30	28%
PATIENT CARE	20	23	15	11	26%

1/ Includes the School of Basic Health Sciences

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TABLE 2-11

SUNY COST STUDY

INSTRUCTION COSTS PER MEDICAL STUDENT - 1973-74

	SUNY SCHOOLS					
	DOWNSTATE ($)	UPSTATE ($)	BUFFALO ($)	STONY BROOK ($)	ADJUSTED IOM PUBLIC SCHOOL AVERAGE[1] ($)	ADJUSTED IOM PUBLIC SCHOOL RANGE[1] ($)
FACULTY COSTS	2,830	3,204	3,373	5,931	3,256	2,200 - 4,290
NON-FACULTY SALARIES	1,481	1,338	1,215	1,677	3,014	2,200 - 4,290
OTHER DIRECT COSTS	1,817	1,718	1,015	3,265		
SUB-TOTAL DIRECT COSTS	6,128	6,260	5,603	10,873	6,270	
INDIRECT COSTS	2,864	3,466	2,224	7,014	1,892	1,430 - 2, 310
INSTRUCTION COSTS	8,992	9,726	7,826	17,887	8,162	5,940 - 10,010
NUMBER OF FTE STUDENTS	861	484	520	85		

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[1] IOM figures are recomputed after excluding SUNY at Buffalo, and adjusted upward by 10 percent for inflation to make them more comparable with SUNY cost study figures for FY 1973-74.

Education Costs and Net Education Expenditures Per Student: Education costs for medical students include the costs of instruction plus the cost of research and patient care activities considered essential to education. Education costs shown in Table 2-12 reflect the full economic costs for conducting the program at the SUNY schools. We used the judgments and procedures developed in the IOM study to compute essential research and patient care costs. Essential research costs average $3,140 per student for the three developed SUNY schools, which is 4 percent higher than the IOM public schools average; this is principally because of the low essential research costs of $2,105 for Buffalo which is 35 percent lower than the adjusted IOM public schools average, and even less than the lowest cost public school in the IOM sample.

Some portion of the cost of essential research and patient care activities included in education costs are recovered by the school from sponsored research projects and payments for patient services. Deducting these reimbursed portions of essential research and patient care costs from education costs leaves the net unfunded portion of education costs termed net education expenditures. Schools that are aggressive in collecting large portions of their research and patient care costs from outside purchasers will have large income offsets resulting in lower net education expenditures.

Private schools typically tend to have larger income offsets than public schools because many states prefer to fund at least portions of their schools' research and patient care activities through their general appropriations. A good example is the full-time faculty member at a private school who must find funding for a portion of his salary either through sponsored research or private patient care; his counterpart at a public school who has his full-time salary budgeted in the school's appropriation has less incentive to recover a portion of his salary from sponsored research or other projects.

This phenomenon is at least in part responsible for the relatively low amounts of income offsets for SUNY schools -- only Downstate shows an income offset for research and even here the offset is 25 percent lower than the IOM public schools average; for patient care, only Upstate and Buffalo show small income offsets of $540, and $595, both of which are roughly 25 percent lower

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TABLE 2-12

SUNY COST STUDY

EDUCATION COSTS AND NET EDUCATION EXPENDITURES PER MEDICAL STUDENT - 1973-74

	SUNY SCHOOLS					
	DOWNSTATE ($)	UPSTATE ($)	BUFFALO ($)	STONY BROOK ($)	ADJUSTED IOM PUBLIC SCHOOL AVERAGE[1/] ($)	ADJUSTED IOM PUBLIC SCHOOL RANGE[1] ($)
INSTRUCTION COSTS	8,992	9,726	7,826	17,887	8,162	5,940 - 10,010
RESEARCH ESSENTIAL TO EDUCATION	3,635	3,607	2,106	7,459	3,267	2,640 - 4,015
PATIENT CARE ESSENTIAL TO EDUCATION	918	1,417	860	1,649	1,760	1,320 - 1,980
EDUCATION COSTS	13,545	14,750	10,794	26,995	13,189	10,560 - 15,510
INCOME OFFSETS FOR:						
• ESSENTIAL RESEARCH	1,466	0	0	0	2,024	550 - 4,070
• ESSENTIAL PATIENT CARE	0	540	596	0	781	0 - 1,980
SUB-TOTAL INCOME OFFSETS	1,466	540	596	0	2,805	
NET EDUCATION EXPENDITURES	12,079	14,210	10,198	26,995	10,384	8,635 - 12,045
NUMBER OF FTE STUDENTS	861	484	520	85		

[1/] IOM figures are recomputed after excluding SUNY at Buffalo, and adjusted upward by 10 percent for inflation to make them more comparable with SUNY cost study figures for FY 1973-74.

than the IOM public schools average. Consequently the net unfunded portion of education costs is higher at SUNY schools than the adjusted IOM public schools average. It is important to point out that a school's inability to generate high income offsets for research or patient care does not reflect adversely on the school's research or patient care activities; it merely reflects the institutional environment of the school and the funding policies and incentives of the State system within which it operates.

APPENDIX C

The bibliography of books, reports, articles, and other studies on these general topics is too extensive for conclusion in this document.

Copies may be available on request.